

The contributions of William “Bill” Aubrey Cobban

NEAL L. LARSON¹ AND NEIL H. LANDMAN²

¹*Black Hills Museum of Natural History, PO Box 614, 217 Main St., Hill City, SD 57745, USA*

²*American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, USA*

Bill COBBAN is an extraordinary biostratigrapher, paleontologist, and geologist, and in a career that has spanned nearly 60 years, he has fundamentally changed our understanding of the Upper Cretaceous Western Interior. William Aubrey “Bill” COBBAN was born Dec. 31, 1916 in Great Falls, MT. He attended the University of Montana in Missoula, and in 1940 went to work for Carter Oil Company (now Exxon) as a geologist, stratigrapher, and map maker. In 1946, Bill attended Johns Hopkins University, receiving his PhD in 1949. His U. S. Geological Survey (USGS) career began in 1948 with field work on the Cretaceous bentonite deposits of southeastern Montana and northwestern South Dakota.

During those early years at the USGS, Bill worked with John B. REESIDE Jr., the father of modern Western Interior biostratigraphy. Throughout his years with the USGS, Bill also spent a great deal of time in the field and collaborating on publications with friends and geologists James GILL and Glenn SCOTT. These three spent most of their career collecting, mapping, and publishing on the geology, stratigraphy, and the invertebrate fauna of the Western Interior Upper Cretaceous marine sediments. The invertebrate collections that these geologists harvested are unequalled, and their research of these fossils changed our perspective of the ancient world and its inhabitants.

Throughout the last 60 years, Bill has also collaborated with respected paleontologists such as the late John “Jake” HANCOCK, Stephen HOOK, Glenn IZETT, Erle KAUFFMAN, W. James KENNEDY, E. Allen MEREWETHER, John D. OBRADOVICH, Ireneusz WALASZCZYK, and many others including the authors. During this time,

Bill has continued to collect, research, and publish extensively on the Western Interior. Bill is responsible for naming and defining most of the 71 Upper Cretaceous ammonite zones of the Western Interior, for dating most of the Late Cretaceous bentonite layers (along with John OBRADOVICH), and correlating the Western Interior with the Gulf and Atlantic Coasts. These zones are recognized and used worldwide in discussions of the Upper Cretaceous. Bill has had four ammonite genera and 17 species of invertebrates named in honor of him; two more are currently in the works. He has named at least 35 genera, 2 subgenera, 214 species, and 11 varieties of ammonites along with 18 species of inoceramids. He is a disciplined researcher who has authored and co-authored more than 300 papers on the invertebrates, biostratigraphy and geology of the North American Late Cretaceous. At 90, Bill continues research and publishing.

Beginning in the 1950’s and up to the present, Bill has produced seminal works including publications on the ammonite fauna and stratigraphy of the Colorado Group of northern Montana (with C. E. ERDMANN and others), the cephalopods of the Mowry Shale (with John B. REESIDE, Jr.), a phenomenally detailed study of the Pierre Shale at Red Bird, Wyoming (with James GILL), the definitive study on dimorphism in scaphitid ammonites, the stratigraphy and ammonite fauna of the Graneros Shale and Greenhorn Limestone near Pueblo, Colorado (with Glenn Scott), numerous monographs on Late Cretaceous ammonites, especially his exhaustive studies on the ammonites of New Mexico (with W. James KENNEDY and Steve HOOK), the correlation of the ammonite zones of North America to Europe (with W. James

KENNEDY and Jake HANCOCK), and the integration of ammonite and inoceramid biostratigraphy (with Ireneusz WALASZCZYK and Peter HARRIES).

Bill's knowledge and passion for ammonites and Cretaceous stratigraphy is unequalled; and it is his continued commitment to the Western Interior Cretaceous invertebrate fauna that is important to everyone who studies Cretaceous geology. Bill has received many well deserved honors during his long career, including the Meritorious Service Award (1974), the Distinguished Geologist Pioneer Award (1985), the Paleontological Medal (1985), the Distinguished Service Award (1986), and the Raymond C. Moore Paleontology Medal (1990). In 2004, he was honored by the participants of the 6th Cephalopods Past and Present Symposium for his unselfish, meritorious, lifetime work on the Late Cretaceous ammonites of North America. In August, 2006, a symposium entitled 'The Paleontology, Geology, and Stratigraphy of the Western Interior Late Cretaceous Seaway; *A tribute to the life of W. A. "Bill" Cobban*' was held in Colorado to honor him for a lifetime of dedicated

work in geology and paleontology. And in 2007, he was given the Dallas Peck Award for a lifetime achievement of scientific excellence in the US Geological Survey's geologic division.

The collections Bill has helped assemble for the USGS represent the fauna from almost every Upper Cretaceous biozone and locality within the Western Interior, the Gulf and the Atlantic Coastal Regions. However, it is his work on ammonites, his collections from nearly 70 years, and his meticulous organization of these collections that still inspire continued research and publications. Bill is currently working on organizing the extensive Cretaceous invertebrate collections at the USGS Denver Federal Center, and co-authoring several new manuscripts on the Late Cretaceous ammonites of the Western Interior.

Bill has been an unselfish teacher to anyone who visited him at the Denver Federal Center. He has inspired many people to choose paleontology as a career or as a hobby. If not for Bill COBBAN, our understanding of the Western Interior and its correlation with the rest of the Cretaceous world would be much poorer.



W. A. Bill COBBAN on an outcrop of Pierre Shale in South Dakota 2001 (photo by Neal L. LARSON)

William A. COBBAN bibliography
(Papers in order of publication)

1. SEAGER, O.A., BLACKSTONE, D.L., JR., COBBAN, W.A., DOWNS, G.R., LAIRD, W.M. & SLOSS, L.L. 1942. Stratigraphy of North Dakota. *American Association Petroleum Geologists Bulletin*, **26** (8), 1414-1423.
2. COBBAN, W.A., IMLAY, R.W. & REESIDE, Jr. J.B. 1945. Type section of Ellis Formation (Jurassic) of Montana. *American Association Petroleum Geologist Bulletin*, **29** (4), 451-453.
3. COBBAN, W.A. 1945. Marine Jurassic formations of Sweetgrass Arch, Montana. *American Association Petroleum Geologists Bulletin*, **29** (9), 1262-1303.
4. COBBAN, W.A. 1947. (Review of) Intraspecific variation in, and ontogeny of, *Prionotropis woollgari* and *Prionocyclus wyomingensis*: by Otto HAAS, American Mus. Nat. History, v. 86, art. 4, 84 p., 1946. *Quart. Review Biol.*, **22** (10), p. 67.
5. COBBAN, W.A. 1948. (Review of) Mesozoic fossils of the Peruvian Andes: by M.M. KNECHTEL, E.F. RICHARDS, & M.V. RATHBUN, Johns HOPKINS University Studies in Geology, no. 15, 150 p., 1947: *Quart. Review Biol.*, **23** (4), p. 348.
6. COBBAN, W.A., RICHARDS, P.W., PATTERSON, S.H., PRICHARD, G.E., ROGERS, JR. C.P. & GARDNER, L.S. 1949. Section of rocks exposed in Bighorn River Canyon-Hardin area, Big Horn County, Montana, *In: Wyoming Geological Association Guidebook*, 4th Annual Field Conference, chart in pocket.
7. COBBAN, W.A. 1950. Telegraph Creek Formation of Sweetgrass Arch, north-central Montana. *American Association Petroleum Geologist Bulletin*, **34** (9), 1889-1901.
8. COBBAN, W.A. & REESIDE, Jr. J.B. 1951. Lower Cretaceous ammonites in Colorado, Wyoming, and Montana. *American Association Petroleum Geologists Bulletin*, **35** (8), 1892-1893.
9. COBBAN, W.A. & REESIDE, Jr. J.B. 1951. Frontier Formation near Sinclair, Carbon County, Wyoming, *In: Wyoming Geological Association Guidebook*, 6th Annual field Conference, South-central Wyoming, 1951, pp. 60-65.
10. COBBAN, W.A. 1951. Colorado Shale of central and northwestern Montana and equivalent rocks of Black Hills. *American Association Petroleum Geologist Bulletin*, **35** (10), 2170-2198.
11. COBBAN, W.A. 1951. New species of *Baculites* from the Upper Cretaceous of Montana and South Dakota. *Journal of Paleontology*, **25** (6), 817-821.
12. COBBAN, W.A. 1951 (1952). Scaphitoid cephalopods of the Colorado group. *U.S. Geological Survey Professional Paper*, **239**, 42 pp.
13. COBBAN, W.A. & REESIDE, Jr. J.B. 1952. Frontier Formation, Wyoming and adjacent areas. *American Association Petroleum Geologists Bulletin*, **36** (10), 1913-1961.
14. COBBAN, W.A. & REESIDE, Jr. J.B. 1952. Correlation of the Cretaceous formations of the Western Interior of the United States. *Geological Society America Bulletin*, **63** (10), 1011-1044.
15. COBBAN, W.A. 1952. Cretaceous rocks on the north flank of the Black Hills uplift, *In: (Eds)*, Billings Geological Society Guidebook, 3rd Annual Field Conference, Black Hills – Williston Basin, 1952, pp. 86-88.
16. COBBAN, W.A. 1952. A new Upper Cretaceous ammonite genus from Wyoming and Utah. *Journal of Paleontology*, **26** (5), 758-760.
17. COBBAN, W.A. 1953. A new species of *Prionocyclus* from Upper Cretaceous Carlile Shale. *Journal of Paleontology*, **27** (3), 353-355.
18. COBBAN, W.A. 1953. Cenomanian ammonite fauna from the Mosby Sandstone of central Montana. *U.S. Geological Survey Professional Paper*, **243-D**, 45-55.
19. COBBAN, W.A. 1953. An Upper Cretaceous section near Mosby, Montana, *In: Billings Geological Society, Guidebook*, 4th Annual Field Conference, Little Rocky Mountains, Montana – southwestern Saskatchewan, 1953, pp. 98-101.
20. REESIDE, J.B., Jr. & COBBAN, W.A. 1954. Ammonite accumulations in the Cretaceous Mowry and Aspen Shales. *Science*, **119** (3089), p. 355.
21. COBBAN, W.A. 1955. Some guide fossils from the Colorado Shale and Telegraph Creek Formation, northwestern Montana, *In: Billings Geological Society, Guidebook*, 6th Annual Field Conference, Sweetgrass Arch – Disturbed Belt, Montana, 1955, pp. 198-207.
22. COBBAN, W.A. 1955. Cretaceous rocks of northwestern Montana: Billings Geological Society, Guidebook, 6th Annual Field Conference, Sweetgrass Arch – Disturbed Belt Montana, 1955, pp. 107-119.
23. COBBAN, W.A. 1956. Cretaceous rocks along part of southeast boundary of Glacier National Park, Montana. *American Association Petroleum Geologists Bulletin*, **40** (5), 1001-1004.

24. COBBAN, W.A., ROHRER, W.L. & ERDMANN, C.E. 1956. Discovery of the Carlile (Turonian) ammonite *Collignoniceras woolgari* in northwestern Montana. *Journal of Paleontology*, **30** (5), 1269-1272.
25. COBBAN, W.A. 1956. The Pierre Shale and older Cretaceous rocks in southeastern Colorado: Rocky Mtn. Association Geologists, Guidebook to the Raton Basin, pp. 25-27.
26. BERGQUIST, H.R. & COBBAN, W.A. 1957. Mollusks of the Cretaceous. *Geological Society America Memoir*, **67** (2), 871-884.
27. COBBAN, W.A. 1957. Mowry and Frontier Formations in southern part of Wind River Basin, Wyoming. *In: Wyoming Geol. Association Guidebook, 12th Annual Field Conference, Southwest Wind River Basin, 1957*, pp. 67-70.
28. COBBAN, W.A., ERDMANN, C.E., ALTO, B.R. & CLARK, C.H. 1958. *Scaphites depressus* zone (Cretaceous) in northwestern Montana. *American Association Petroleum Geologist Bulletin*, **42** (3), 656-660.
29. COBBAN, W.A. 1958. Two new species of *Baculites* from the Western Interior Region. *Journal of Paleontology*, **32** (4), 660-665.
30. COBBAN, W.A. 1958. Late Cretaceous fossil zones of the Powder River Basin, Wyoming and Montana. *In: Wyoming Geological Association Guidebook, 13th Annual Field Conference, Powder River Basin, 1958*, pp. 114-119.
31. COBBAN, W.A., ERDMANN, C.E., LEMKE, R.W. & MAUGHAN, E.K. 1959. Colorado group on Sweetgrass Arch, Montana. *In: Billings Geological Society Guidebook, 10th Annual Field Conference, Sawtooth-Disturbed Belt Area, 1959*, pp. 89-92.
32. ROBINSON, C.S., MAPEL, W.J. & COBBAN, W.A. 1959. Pierre Shale along western and northern flanks of Black Hills, Wyoming and Montana. *American Association Petroleum Geologists Bulletin*, **43** (1), 101-123.
33. COBBAN, W.A., ERDMANN, C.E., LEMKE, R.W. & MAUGHAN, E.K. 1959. Revision of Colorado group on Sweetgrass Arch, Montana. *American Association Petroleum Geologists Bulletin*, **43** (12), 2786-2796.
34. SCOTT, G.R. & COBBAN, W.A. 1959. So-called Hygiene group of northeastern Colorado. *In: Rocky Mtn. Association Geologists Guidebook, 11th Annual Field Conference, Symposium on Cretaceous rocks of Colorado and adjacent areas, 1959*, pp. 124-131.
35. COBBAN, W.A. 1959. Memorial to John Bernard Reeside, Jr. *American Association Petroleum Geologists Bulletin*, **43** (10), 2530-2533.
36. REESIDE, J.B., Jr. & COBBAN, W.A. 1960. Studies of the Mowry Shale (Cretaceous) and contemporary formations in the United States and Canada. *U.S. Geological Survey Professional Paper*, **355**, 126 pp.
37. ZAPP, A.D. & COBBAN, W.A. 1960. Some Late Cretaceous strand lines in northwestern Colorado and northeastern Utah. *U.S. Geological Survey Professional Paper*, **400-B**, B246-B249.
38. COBBAN, W.A. 1960. Cretaceous. *In: McGraw-Hill Encyclopedia of Science and Technology*, pp. 542-546.
39. COBBAN, W.A. & GRYS, G. 1961. Ammonites from the Seabee Formation (Cretaceous) of northern Alaska. *Journal of Paleontology*, **35** (1), 176-190.
40. COBBAN, W.A. 1961. The ammonite family *Binneyitidae* Reeside in the Western Interior of the United States. *Journal of Paleontology*, **35** (4), 737-758.
41. GILL, J.R. & COBBAN, W.A. 1961. Stratigraphy of lower and middle parts of the Pierre Shale, northern Great Plains. *U.S. Geological Survey Professional Paper*, **424-D**, D185-D191.
42. COBBAN, W.A. 1962. New *Baculites* from the Bearpaw shale and equivalent rocks of the Western Interior. *Journal of Paleontology*, **36** (1), 126-135.
43. COBBAN, W.A. 1962. *Baculites* from the lower part of the Pierre Shale and equivalent rocks in the Western Interior. *Journal of Paleontology*, **36** (4), 704-718.
44. GILL, J.R. & COBBAN, W.A. 1962. Red Bird Silty Member of the Pierre Shale, a new stratigraphic unit. *U.S. Geological Survey Professional Paper*, **450-B**, B21-B24.
45. COBBAN, W.A., SCOTT, G.R. & GILL, J.R. 1962. Recent discoveries of the Cretaceous ammonite *Haresiceras* and their stratigraphic significance. *U.S. Geological Survey Professional Paper*, **450-B**, B58-B60.
46. SCOTT, G.R. & COBBAN, W.A. 1962. *Clioscaphtes saxtonianus* (McLEARN), a discrete ammonite zone in the Niobrara Formation at Pueblo, Colorado. *U.S. Geological Survey Professional Paper*, **450-C**, p. C85.
47. COBBAN, W.A. 1962. Late Cretaceous *Desmoscaphtes* Range Zone in the Western Interior Region. *U.S. Geological Survey Professional Paper*, **450-D**, pp. 140-144.
48. ZAPP, A.D. & COBBAN, W.A. 1962. Some Late Cretaceous strand lines in southern Wyoming. *U.S. Geological Survey Professional Paper*, **450-D**, pp. D52-D55.
49. SCOTT, G.R., & COBBAN, W.A. 1963. Apache Creek Sandstone Member of the Pierre Shale of southeastern Colorado. *U.S. Geological Survey Professional Paper*, **475-B**, pp. B99-B101.
50. COBBAN, W.A. 1963. Occurrence of the Late Cretaceous ammonite *Hoplitoplacenticeras* in Wyoming. *U.S. Geological Survey Professional Paper*, **475-C**, pp. C60-C62.

51. SCOTT, G.R. & COBBAN, W.A. 1964. Stratigraphy of the Niobrara Formation at Pueblo, Colorado. *U.S. Geological Survey Professional Paper*, **454-L**, 30 pp.
52. COBBAN, W.A. 1964. The Late Cretaceous cephalopod *Haresiceras* Reeside and its possible origin. *U.S. Geological Survey Professional Paper*, **454-I**, 21 pp.
53. COBBAN, W.A. & SCOTT, G.R. 1964. Multinodose scaphitid cephalopods from the lower part of the Pierre Shale and equivalent rocks in the conterminous United States. *U.S. Geological Survey Professional Paper*, **483-E**, 12 pp.
54. GILL, J.R. & COBBAN, W.A. 1965. Stratigraphy of the Pierre Shale, Valley City and Pembina Mountains areas, North Dakota. *U.S. Geological Survey Professional Paper*, **392-A**, 20 pp.
55. COBBAN, W.A. & JELETZKY, J.A. 1965. A new scaphite from the Campanian rocks of the Western Interior of North America. *Journal of Paleontology*, **39** (5), 794-801.
56. GILL, J.R. & COBBAN, W.A. 1966. Regional unconformity in Late Cretaceous, Wyoming. *U.S. Geological Survey Professional Paper*, **550-B**, pp. B20-B27.
57. COBBAN, W.A. 1965. Pierre Shale *In*: D.E. HATTIN (Ed.), Upper Cretaceous stratigraphy, paleontology, and paleoecology of western Kansas. Geological Society America Field Conference Guidebook, 1965, pp. 22-26.
58. SCOTT, G.R. & COBBAN, W.A. 1965. Geologic and biostratigraphic map of the Pierre Shale between Jarre Creek and Loveland, Colorado, U.S. Geological Survey Map 1-439, scale 1: 48,000, separate text.
59. DANE, C.H., KAUFFMAN, E.G. & COBBAN, W.A. 1966. Stratigraphy and regional relationships of a reference section for the Juana Lopez Member, Mancos Shale, in the San Juan Basin, New Mexico. *U.S. Geological Survey Bulletin*, **1224-H**, 15 pp.
60. GILL, J.R. & COBBAN, W.A. 1966. The Red Bird section of the Upper Cretaceous Pierre Shale in Wyoming, with a section on A new echinoid from the Cretaceous Pierre Shale of eastern Wyoming, by Porter M. KIER. *U.S. Geological Survey Professional Paper*, **393-A**, 73 pp.
61. COBBAN, W.A. 1967. Close of the Cretaceous: *In*: Evolution of the Colorado River in Arizona – A hypothesis developed at the symposium on Cenozoic Geology of the Colorado Plateau in Arizona, Aug. 1964. *Museum of Northern Arizona Bulletin*, **44**, p. 29.
62. DANE, C.H., KAUFFMAN, E.G. & COBBAN, W.A. 1968. Semilla Sandstone, a new member of the Mancos Shale in the southeastern part of the San Juan Basin, New Mexico. *U.S. Geological Survey Bulletin*, **1254-F**, 21 pp.
63. DANE, C.H., LANDIS, E.R. & COBBAN, W.A. 1968. The Two Wells Sandstone Tongue of the Dakota Sandstone and the Tres Hermanos Sandstone as used by Herrick (1900). western New Mexico. *U.S. Geological Survey Professional Paper*, **750-B**, B17-B22.
64. TOURTELOT, H.A. & COBBAN, W.A. 1968. Stratigraphic significance and petrology of phosphate nodules at base of Niobrara Formation east flank of Black Hills, South Dakota. *U.S. Geological Survey Professional Paper*, **594-L**, 22 pp.
65. COBBAN, W.A. 1969. The Late Cretaceous ammonites *Scaphites leei* Reeside and *Scaphites hippocrepis* (DEKAY) in the Western Interior of the United States. *U.S. Geological Survey Professional Paper*, **619**, 29 pp.
66. GILL, J.R. & COBBAN, W.A. 1969. Paleogeographic maps of Telegraph Creek, Eagle, Claggett, Judith River, Bearpaw, and Fox Hills times of Late Cretaceous Epoch in the Western Interior Region. U.S. Geological Survey Open-File Report, 69-106, 6 sheets of maps.
67. GILL, J.R., MEREWETHER, E.A. & COBBAN, W.A. 1970. Stratigraphy and nomenclature of some Upper Cretaceous and lower Tertiary rocks in south-central Wyoming. *U.S. Geological Survey Professional Paper*, **667**, 53 pp.
68. COBBAN, W.A. 1970 (1971). Occurrence of the Late Cretaceous ammonites *Didymoceras stevensoni* (WHITFIELD) and *Exiteloceras jenneyi* (WHITFIELD) in Delaware, *In*: Geological Survey Research 1970. *U.S. Geological Survey Professional Paper*, **700-O**, pp. O71-O76.
69. IZETT, G.A., COBBAN, W.A. & GILL, J.R. 1971. The Pierre Shale near Kremmling, Colorado, and its correlation to the east and west. *U.S. Geological Survey Professional Paper*, **684-A**, 19 pp.
70. COBBAN, W.A. 1971. New and little-known ammonites from the Upper Cretaceous (Cenomanian and Turonian) of the Western Interior of the United States. *U.S. Geological Survey Professional Paper*, **699**, 24 pp.
71. COBBAN, W.A. & L.G. SCHULTZ, 1972. Stratigraphy and composition of the Sharon Springs Member of the Pierre Shale in western Kansas. *U.S. Geological Survey Professional Paper*, **728**, 50 pp.
72. COBBAN, W.A. 1972. Cretaceous Stages, *In*: W.W. MALLORY (Ed.), Geologic Atlas of the Rocky Mountain Region. Rocky Mountain Association of Geologists, p. 190.
73. GILL, J.R., COBBAN, W.A. & SCHULTZ, L.G. 1972.

- Correlation, ammonite zonation, and a reference section for the Montana Group, central Montana, *In: Montana Geological Society Guidebook, 21st Annual Field Conference, Crazy Mountains Basin, 1972*, pp. 91-97.
74. MEREWETHER, E.A. & COBBAN, W.A. 1972. Unconformities within the Frontier Formation, northwestern Carbon County, Wyoming, *In: Geological Survey Research 1972. U.S. Geological Survey Professional Paper, 800-D*, D57-D66.
75. GILL, J.R., COBBAN, W.A., SCOTT, G.R. & BURKHOLDER, R.E. 1972. Section of Pierre Shale measured in the Florence and Canon City quadrangles, Colorado: U.S. Geological Survey Open-File Report 1780, 6 sheets of measured sections.
76. COBBAN, W.A. & SCOTT, G.R. 1972. Stratigraphy and ammonite fauna of the Graneros Shale and Greenhorn Limestone near Pueblo, Colorado. *U.S. Geological Survey Professional Paper, 645*, 108 pp.
77. COBBAN, W.A. 1973. The Late Cretaceous ammonite *Baculites undatus* STEPHENSON in Colorado and New Mexico. *U.S. Geological Survey Journal Research, 1* (4), 459-465.
78. GILL, J.R. & COBBAN, W.A. 1973. Stratigraphy and geologic history of the Montana Group and equivalent rocks, Montana, Wyoming, and North and South Dakota. *U.S. Geological Survey Professional Paper, 776*, 37 pp.
79. LANDIS, E.R., DANE, C.H. & COBBAN, W.A. 1973. Stratigraphic terminology of the Dakota Sandstone and Mancos Shale, west-central New Mexico. *U.S. Geological Survey Bulletin, 1372-J*, 44 pp.
80. COBBAN, W.A. 1973. The Late Cretaceous ammonite *Trachyscaphites pulcherrimus* (ROEMER) in New Jersey and Texas: *U.S. Geological Survey Journal Research, 1* (6), 695-700.
81. MEREWETHER, E.A. & COBBAN, W.A. 1973. Stratigraphic sections of the Upper Cretaceous Frontier Formation near Casper and Douglas, Wyoming. *Wyoming Geological Association Earth Science Bulletin, 6* (4), 38-39.
82. COBBAN, W.A. 1973 (1974). Significant ammonite finds in uppermost Mancos Shale and overlying formations between Barker Dome, New Mexico, and Grand Junction, Colorado. *In: Cretaceous and Tertiary rocks of the southern Colorado Plateau. Four Corners Geological Society Memoirs*, 148-153.
83. LANDIS, E.R., DANE, C.H. & COBBAN, W.A. 1973 (1974). The Dakota Sandstone and Mancos Shale in the Laguna-Acoma-Grants area, New Mexico, *In: Cretaceous and Tertiary rocks of the southern Colorado Plateau. Four Corners Geological Society Memoirs*, pp. 28-36.
84. COBBAN, W.A. 1974. Some ammonoids from the Ripley Formation of Mississippi, Alabama, and Georgia. *U.S. Geological Survey Journal Research, 2* (1), 81-88.
85. COBBAN, W.A. 1974. Ammonites from the Navesink Formation at Atlantic Highlands, New Jersey. *U.S. Geological Survey Professional Paper, 845*, 20 pp.
86. COBBAN, W.A., LANDIS, E.R. & DANE, C.H. 1974. Age relations of upper part of the Lewis Shale on the east side of San Juan Basin, New Mexico, *In: New Mexico Geological Society Guidebook, 25th Annual Field Conference, Ghost Ranch (central-northern New Mexico), 1974*, pp. 279-282.
87. LANDIS, E.R., DANE, C.H. & COBBAN, W.A. 1974. Cretaceous rocks of The Tierra Amarilla coal field and adjacent areas, Rio Arriba County, New Mexico, *In: New Mexico Geological Society Guidebook, 25th Annual Field Conference, Ghost Ranch (central-northern New Mexico), 1974*, 231-238.
88. COBBAN, W.A. 1974. (Review of) Cenomanian ammonites from southern England, by W.J. KENNEDY, Palaeontological Association (London), Spec. Paper 8, 1971. *Journal of Paleontology, 48* (6), 1296-1297.
89. COBBAN, W.A. 1975. Memorial to James Rogers Gill, 1922-1972. *Geological Society America Memorials, 4*, 74-79.
90. COBBAN, W.A. 1975. The Upper Cretaceous ammonite *Calycoceras naviculare* (MANTELL) in Arizona. *Plateau, 47* (3), 109-112.
91. MEREWETHER, E.A., COBBAN, W.A. & RYDER, R.T. 1975. Lower Upper Cretaceous strata, Bighorn Basin, Wyoming and Montana, *In: Wyoming Geol. Association Guidebook, 27th Annual Field Conference, Bighorn Basin, 1975*, 73-84.
92. OBRADOVICH, J.D. & COBBAN, W.A. 1975. A time-scale for the Late Cretaceous of the Western Interior of North America. *Geological Association Canada Special Paper, 13*, 31-54.
93. GILL, J.R., COBBAN, W.A., SCOTT, G.R. & BURKHOLDER, R.E. 1975. Unedited stratigraphic sections of the Pierre Shale near Round Butte and Buckeye in Larimer County, northern Colorado. U.S. Geological Survey Open-File Report, 75-129, 12 pp.
94. KENNEDY, W.J. & COBBAN, W.A. 1976. Aspects of ammonite biology, biogeography, and biostratigraphy. *Special Papers in Palaeontology, 17*, 94 pp.
95. MEREWETHER, E.A., COBBAN, W.A. & SPENCER, C.W. 1976. The Upper Cretaceous Frontier Formation in the Kaycee-Tisdale Mountain area,

- Johnson County, Wyoming. *In: Geology and energy resources of the Powder River Basin, Wyoming Geological Association Guidebook, 28th Annual Field Conference, Casper, 1976, pp. 33-44.*
96. COBBAN, W.A. 1976. Ammonite record from the Mancos Shale of the Castle Valley-Price-Woodside area, east-central Utah. *Brigham Young University Geology Studies*, **22** (3), 117-126.
97. COBBAN, W.A., ERDMANN, C.E., LEMKE, R.W. & MAUGHAN, E.K. 1976. Type sections and stratigraphy of the members of the Blackleaf and Marias River Formations (Cretaceous) of the Sweetgrass Arch, Montana. *U.S. Geological Survey Professional Paper*, **974**, 66 pp.
98. COBBAN, W.A. 1976. Ammonite record from the Pierre Shale of northeastern New Mexico. *In: New Mexico Geological Society Guidebook, 27th Annual Field Conference, Veremjo Park, 1976, pp. 165-169.*
99. MEREWETHER, E.A., COBBAN, W.A. & CAVANAUGH, E.T. 1976. Frontier Formation and equivalent rocks in eastern Wyoming. RMAG. *The Mountain Geologist*, **16**, 67-101.
100. SCOTT, G.R. & COBBAN, W.A. 1976. Geologic and biostratigraphic map of the Pierre Shale in the Canon City-Florence basin and the Twelvemile Park area, south-central Colorado. U.S. Geological Survey Misc. Geological Inv. Map 1-937, scale 1:48,000.
101. KAUFFMAN, E.G., COBBAN, W.A. & EICHER, D.L. 1976 (1978). Albian through Lower Coniacian strata, biostratigraphy and principal events, Western Interior United States. *Annales du Museum d'Histoire Naturelle de Nice*, **4**, 52 pp.
102. KENNEDY, W.J. & COBBAN, W.A. 1977. The role of ammonites in biostratigraphy. *In: E.G. KAUFFMAN & J.E. HAZEL (Eds)*, 1977, Concepts and methods of biostratigraphy, pp. 309-320. *Dowden, Hutchinson, and Ross Inc.*; Stroudsburg, Pa.
103. COBBAN, W.A. 1977. A new curved baculite from the Upper Cretaceous of Wyoming. *U.S. Geological Survey Journal Research*, **5** (4), 457-462.
104. HATTIN, D.E. & COBBAN, W.A. 1977. Upper Cretaceous stratigraphy, paleontology, and paleoecology of western Kansas. *In: E.G. KAUFFMAN (Ed.)*. *The Mountain Geologist*, **14** (3-4), 175-217.
105. COBBAN, W.A. 1977. Pierre Shale: *In: E.G. KAUFFMAN (Ed.)*, Cretaceous facies, faunas, and paleoenvironments across the Western Interior Basin. *The Mountain Geologist*, **14** (3-4), 193-194.
106. RICE, D.D. & COBBAN, W.A. 1977. Cretaceous stratigraphy of the Glacier National Park area, northwestern Montana. *Canadian Petroleum Geology Bulletin*, **25** (4), 828-841.
107. COBBAN, W.A. 1977. Fossil mollusks of the Dakota Sandstone and intertongued Mancos Shale of west-central New Mexico. *In: New Mexico Geological Society Guidebook, 28th Annual Field Conference, San Juan Basin III, 1977, 213-220.*
108. HOOK, S.C. & COBBAN, W.A. 1977. *Pycnodonte newberryi* (STANTON) – a common guide fossil in Upper Cretaceous of New Mexico. New Mexico Bureau Mines and Mineral Resources Annual Rept., July 1, 1976 to June 30, 1977, 48-54.
109. COBBAN, W.A. 1977. Characteristic marine molluscan fossils from the Dakota Sandstone and intertongued Mancos Shale, west-central New Mexico. *U.S. Geological Survey Professional Paper*, **1009**, 30 pp.
110. MEREWETHER, E.A., COBBAN, W.A., MATSON, R.M. & MAGATHAN, W.J. 1977. Stratigraphic diagrams with electric logs of Upper Cretaceous rocks, Powder River Basin, JOHNSON, CAMPBELL, and CROOK Counties, Wyoming. U.S. Geological Survey Oil and Gas Inv. Map OC-73.
111. MEREWETHER, E.A., COBBAN, W.A., MATSON, R.M. & MAGATHAN, W.J. 1977. Stratigraphic diagrams with electric logs of Upper Cretaceous rocks, Powder River Basin, Natrona, Campbell, and Weston Counties, Wyoming. U.S. Geological Survey Oil and Gas Inv. Map OC-74.
112. MEREWETHER, E.A., COBBAN, W.A., MATSON, R.M. & MAGATHAN, W.J. 1977. Stratigraphic diagrams with electric logs of Upper Cretaceous rocks, Powder River Basin, Natrona, Converse, and Niobrara Counties, Wyoming. U.S. Geological Survey Oil and Gas Inv. Map OC-75.
113. MEREWETHER, E.A., COBBAN, W.A., MATSON, R.M. & MAGATHAN, W.J. 1977. Stratigraphic diagrams with electric logs of Upper Cretaceous rocks, Powder River Basin, Sheridan, Johnson, Campbell, and Converse Counties, Wyoming. U.S. Geological Survey Oil and Gas Inv. Map OC-76.
114. MEREWETHER, E.A., COBBAN, W.A. & CAVANAUGH, E.T. 1979. Frontier Formation and equivalent rocks in eastern Wyoming. *The Mountain Geologist*, **16** (3), 67-102.
115. HOOK, S.C. & COBBAN, W.A. 1979. *Prionocyclus novimexicanus* (MARCOU), common Upper Cretaceous guide fossil in New Mexico. New Mexico Bureau of Mines & Mineral Resources Annual Report, July 1, 1977 to June 30, 1978, pp. 34-42.
116. COBBAN, W.A. & HOOK, S.C. 1979. *Collignonicerias woolligari woolligari* (MANTELL) ammonite fauna

- from Upper Cretaceous of Western Interior, United States. *New Mexico Bureau Mines & Mineral Resources Memoir*, **37**, 51 pp.
117. HOOK, S.C., COBBAN, W.A. & LANDIS, E.R. 1980. Extension of the intertongued Dakota Sandstone-Mancos Shale terminology into the southern Zuni Basin. *New Mexico Geology*, **2** (3), 42-44, 46.
118. HOOK, S.C. & COBBAN, W.A. 1980. Reinterpretation of type section of Juana Lopez Member of Mancos Shale. *New Mexico Geology*, **2** (2), 17-22.
119. HOOK, S.C. & COBBAN, W.A. 1980. Some guide fossils in Upper Cretaceous Juana Lopez Member of Mancos and Carlile Shales. New Mexico Bureau of Mines & Mineral Resources, Annual Report, July 1, 1978 to June 30, 1979, 38-49.
120. COBBAN, W.A. & HOOK, S.C. 1980. The Upper Cretaceous (Turonian) ammonite family *Coilopoceratidae* HYATT in the Western Interior of the United States. *U.S. Geological Survey Professional Paper*, **1192**, 28 pp.
121. COBBAN, W.A. & HOOK, S.C. 1980. Occurrence of *Ostrea beloiti* LOGAN in Cenomanian rocks of Trans-Pecos Texas. *In: New Mexico Geological Society Guidebook, 31st Field Conference, Trans-Pecos region, 1980*, pp. 169-172.
122. HOOK, S.C. & COBBAN, W.A. 1981. *Lopha sannionis* (WHITE) – common Upper Cretaceous guide fossil in New Mexico. New Mexico Bureau of Mines and Mineral Resources Annual Report, July 1, 1979 to June 30, 1980, pp. 52-56.
123. HOOK, S.C. & COBBAN, W.A. 1981. Late Greenhorn (mid-Cretaceous) discontinuity surfaces, southwest New Mexico. Contributions to mid-Cretaceous paleontology and stratigraphy of New Mexico. New Mexico Bureau of Mines and Mineral Resources Circular, **180**, 5-21.
124. COBBAN, W.A. & HOOK, S.C. 1981. New turrilitid ammonite from mid-Cretaceous (Cenomanian) of southwest New Mexico. Contributions to mid-Cretaceous paleontology and stratigraphy of New Mexico. New Mexico Bureau of Mines and Mineral Resources Circular, **180**, 22-29.
125. MEREWETHER, E.A. & COBBAN, W.A. 1981. Mid-Cretaceous formations in eastern South Dakota and adjoining areas – stratigraphic, paleontologic, and structural interpretations. Cretaceous stratigraphy and sedimentation in northwest Iowa, northeast Nebraska, and southeast South Dakota. Iowa Geological Survey Guidebook Series, 4, pp. 43-56.
126. COBBAN, W.A. & HOOK, S.C. 1981. An unusually large specimen of the Turonian ammonite *Hoplitoides* von KOENEN from New Mexico. Contributions to mid-Cretaceous paleontology and stratigraphy of New Mexico. *New Mexico Bureau of Mines and Mineral Resources Circular*, **180**, 30-35.
127. HOOK, S.C. & COBBAN, W.A. 1982. *Spathites puercoensis* (HERRICK & JOHNSON) – Common Upper Cretaceous guide fossil in Rio Puerco valley, New Mexico. *In: F.E. KOTTLOWSKI & al.*, New Mexico Bureau of Mines & Mineral Resources Annual Report 1980-1981, pp. 36-39.
128. FOUCH, T.D., LAWTON, T.F., NICHOLS, D.J., CASHION, W.B. & COBBAN, W.A. 1982. Chart showing preliminary correlation of major Albian to middle Eocene rock units from the Sanpete Valley in central Utah to the Book Cliffs in eastern Utah in Utah Geological Association Publication 10, Overthrust Belt of Utah, pp. 267-272.
129. COBBAN, W.A. & MEREWETHER, E.A. 1983. Stratigraphy and paleontology of mid-Cretaceous rocks in Minnesota and contiguous areas. *U.S. Geological Survey Professional Paper*, **1253**, 52 pp.
130. COBBAN, W.A., 1983. Molluscan fossil record from the northeastern part of the Upper Cretaceous seaway, Western Interior. *In: W.A. COBBAN & E.A. MEREWETHER*, Stratigraphy and paleontology of mid-Cretaceous rocks in Minnesota and contiguous areas. *U.S. Geological Survey Professional Paper*, **1253**, 1-25.
131. HOOK, S.C. & COBBAN, W.A. 1983. Mid-Cretaceous molluscan sequence at Gold Hill, Jeff Davis County, Texas, with comparison to New Mexico. Contributions to mid-Cretaceous paleontology and stratigraphy of New Mexico, part II. *New Mexico Bureau of Mines and Mineral Resources Circular*, **185**, 48-54.
132. COBBAN, W.A. & HOOK, S.C. 1983. *Pseudaspidoceras pseudonodosoides* (CHOFFAT) – common Upper Cretaceous guide fossil in southwest New Mexico. New Mexico Bureau of Mines and Mineral Resources Annual Report, 1981-82, pp. 37-40.
133. MEREWETHER, E.A., MOLENAAR, C.M. & COBBAN, W.A. 1983. Map and diagrams showing lithofacies and stratigraphic nomenclature for formations of Turonian and Coniacian Age in the Middle Rocky Mountains. Mid-Cretaceous Codell Sandstone Member of Carlile Shale eastern Colorado. Society of Economic Paleontologists and Mineralogists Rocky Mountain Section, Spring Field Trip Guidebook, 1983, pp. 19-25.
134. BADER, J.W., GILL, J.R., COBBAN, W.A. & LAW, B.E. 1983. Biostratigraphic correlation chart of some Upper Cretaceous rocks from the Lost Soldier area,

- Wyoming, to west of Craig, Colorado. U.S. Geological Survey Miscellaneous Field Studies Map MF-1548.
135. COBBAN, W.A. 1983. (Review of) The ammonites – their life and their world, by Ulrich LEHMANN, Cambridge University Press, 246 p., 1981. *Earth-Science Reviews*, **19** (4), 355-356.
 136. HOOK, S.C., MOLENAAR, C.M. & COBBAN, W.A. 1983. Stratigraphy and revision of nomenclature of upper Cenomanian to Turonian (Upper Cretaceous) rocks of west-central New Mexico. Contributions to mid-Cretaceous paleontology and stratigraphy of New Mexico, part II. *New Mexico Bureau of Mines and Mineral Resources Circular*, **185**, 7-28.
 137. COBBAN, W.A. & HOOK, S.C. 1983. Mid-Cretaceous (Turonian) ammonite fauna from Fence Lake area of west-central New Mexico. *New Mexico Bureau of Mines and Mineral Resources Memoir*, **41**, 50 pp.
 138. FOUCH, T.D., LAWTON, T.F., NICHOLS, D.J., CASHION, W.B. & COBBAN, W.A. 1982 (1983). Patterns and timing of synorogenic sedimentation in Upper Cretaceous rocks of central and northeast Utah. *In*: M.W. REYNOLDS & E.D. DOLLY (Eds), Mesozoic paleogeography of the west-central United States: Society of Economic Paleontologists and Mineralogists, Rocky Mountain Paleogeography Symposium, 2, pp. 305-336.
 139. COBBAN, W.A. 1984. (Review of) The Cretaceous ammonites of Venezuela, by Otto RENZ, Birkhauser Graphisches Unternehmen, Basel, 132 pp., 1982. *Earth-Science Reviews*, **20** (3), 258-259.
 140. COBBAN, W.A. 1984. Molluscan record from a mid-Cretaceous borehole in Weston County, Wyoming. *U.S. Geological Survey Professional Paper*, **1271**, 24 pp.
 141. COBBAN, W.A. 1984. Mid-Cretaceous ammonite zones, Western Interior, United States. *Bulletin of the Geological Society of Denmark*, **33** (1-2), 71-89.
 142. COBBAN, W.A. 1984. The Upper Cretaceous guide fossil *Myciloides myciloides* (MANTELL), in New Mexico. New Mexico Bureau of Mines and Mineral Resources Annual Report 1982-83, pp. 35-36.
 143. COBBAN, W.A. & HOOK, S.C. 1984. Mid-Cretaceous molluscan biostratigraphy and paleogeography of southwestern part of the Western Interior, United States. *Geological Association of Canada Special Paper*, **27**, 257-271.
 144. COBBAN, W.A. 1985. The Lower Cretaceous ammonite *Schloenbachia leonensis* CONRAD var. *equidiscans* CRAGIN. *U.S. Geological Survey Bulletin*, **1641-A**, 4 pp.
 145. MEREWETHER, E.A. & COBBAN, W.A. 1985. Tectonism in the mid-Cretaceous foreland, southeastern Wyoming and adjoining areas. *In*: Wyoming Geological Association Guidebook 36th Annual Field Conference, The Cretaceous of Wyoming, pp. 67-73.
 146. COBBAN, W.A. 1985. Ammonite record from Bridge Creek Member of Greenhorn Limestone at Pueblo Reservoir State Recreation Area, Colorado. *In*: Society of Economic Paleontologists and Mineralogists Field Trip Guidebook No. 4, 1985 Midyear Meeting, Golden, Colorado, pp. 135-138.
 147. SCOTT, G.R. & COBBAN, W.A. 1986. Geologic and biostratigraphic map of the Pierre Shale in the Colorado Springs-Pueblo area, Colorado. U.S. Geological Survey Miscellaneous Investigations Series Map 1-1627, scale 1:100,000, includes text on map.
 148. COBBAN, W.A. 1986. (Review of) The Mesozoic of Middle North America, edited by D. F. STOTT and D. J. GLASS, Canadian Society of Petroleum Geologists Memoir 9, Calgary, 1984, 573 pp. *Geology*, **14** (4), p. 365.
 149. COBBAN, W.A. 1986. Upper Cretaceous molluscan record from Lincoln County, New Mexico. *In*: Southwest Section of AAPG Transactions and Guidebook of 1986 Convention, Ruidoso, New Mexico, pp. 77-89.
 150. MEREWETHER, E.A. & COBBAN, W.A. 1986. Biostratigraphic units and tectonism in the mid-Cretaceous foreland of Wyoming, Colorado, and adjoining area. *In*: J.A. PETERSON, (Ed.), Paleotectonics and sedimentation in the Rocky Mountain region, U.S. *American Association Petroleum Geologists Memoir*, **41**, 443-468.
 151. MEREWETHER, E.A. & COBBAN, W.A. 1986. Evidence of mid-Cretaceous tectonism in the Frontier Formation, Natrona County, Wyoming. *Earth Science Bulletin*, **19** (2), 142-152.
 152. MEREWETHER, E.A. & COBBAN, W.A. 1986. Road log from northern Casper to Emigrant Gap Ridge, to Coal Creek area, to southwestern Casper. *Earth Science Bulletin*, **19**, (2), 153-155.
 153. SCOTT, G.R., COBBAN, W.A. & MEREWETHER, E.A. 1986. Stratigraphy of the Upper Cretaceous Niobrara Formation in the Raton Basin, New Mexico. *New Mexico Bureau of Mines and Mineral Resources Bulletin*, **115**, 34 pp.
 154. KIRKLAND, J.I. & COBBAN, W.A. 1986. *Cunningtoniceras arizonense* n. sp., a large acanthoceratid ammonite from the upper Cenomanian (Cretaceous) of eastern central Arizona. *Hunteria*, **1** (1), 1-14.

155. SCOTT, G.R. & COBBAN, W.A. 1986. Geologic, biostratigraphic, and structure map of the Pierre Shale between Loveland and Round Butte, Colorado. U.S. Geological Survey Miscellaneous Investigations Series Map 1-1700, 2 sheets with text.
156. COBBAN, W.A. 1987. Some acanthoceratid ammonites from upper Cenomanian (Upper Cretaceous) rocks of Wyoming. *U.S. Geological Survey Professional Paper*, **1353**, 17 pp.
157. COBBAN, W.A. 1987. Ammonite faunas of the Sarten Sandstone (Cretaceous), Luna County, New Mexico. *U.S. Geological Survey Bulletin*, **1641-B**, 17 pp.
158. COBBAN, W.A. 1987. The Upper Cretaceous ammonite *Eubostrychoceras* MATSUMOTO in the Western Interior of the United States. *In: Shorter Contributions to Paleontology and Stratigraphy. U.S. Geological Survey Bulletin*, **1690-A**, A1-A5.
159. COBBAN, W.A. 1987. A new ammonite from the Upper Cretaceous of Kansas. *In: Shorter Contributions to Paleontology and Stratigraphy. U.S. Geological Survey Bulletin*, **1690-B**, BI-B3.
160. COBBAN, W.A. 1987. The Upper Cretaceous (Cenomanian) ammonites *Metengonoceras dumbli* (CRAGIN) and *M. acutum* HYATT. *In: Shorter Contributions to Paleontology and Stratigraphy. U.S. Geological Survey Bulletin*, **1690**, C1-C7.
161. COBBAN, W.A. 1987. Some middle Cenomanian (Upper Cretaceous) acanthoceratid ammonites from the Western Interior of the United States. *U.S. Geological Survey Professional Paper*, **1445**, 28 pp.
162. COBBAN, W.A. 1987. The Upper Cretaceous ammonite *Rhaeboceras* MEEK in the Western Interior of the United States. *U.S. Geological Survey Professional Paper*, **1477**, 15 pp.
163. COBBAN, W.A. 1987. An ammonoid fauna from the Glencairn Shale Member of the Lower Cretaceous Purgatoire Formation, Baca County, Colorado. *In: New Mexico Geological Society Guidebook, 38th Field Conference, Northeastern New Mexico*, pp. 217-222.
164. COBBAN, W.A. & KENNEDY, W.J. 1988. *Reesidites* (Cretaceous Ammonoidea) from the upper Turonian of New Mexico. *Neues Jahrbuch für Geologie und Paläontologie Monatshefte*, 1988 (2), 65-70.
165. COBBAN, W.A. 1988. The Late Cretaceous ammonite *Spathites* Kummel and Decker in New Mexico and Trans-Pecos Texas. *In: Contributions to Late Cretaceous paleontology and stratigraphy of New Mexico, Part 2. New Mexico Bureau of Mines and Mineral Resources Bulletin*, **114**, 5-21.
166. KENNEDY, W.J. & COBBAN, W.A. 1988. The Late Cretaceous ammonite *Romaniceras*, Spath, 1923, in New Mexico. *In: Contributions to Late Cretaceous paleontology and stratigraphy of New Mexico, Part 2. New Mexico Bureau of Mines and Mineral Resources Bulletin*, **114**, 23-34.
167. KENNEDY, W.J., COBBAN, W.A. & HOOK, S.C. 1988. Middle Cenomanian (Late Cretaceous) molluscan fauna from the base of the Boquillas Formation, Cerro de Muleros, Doña Ana County, New Mexico. *In: Contributions to Late Cretaceous paleontology and stratigraphy of New Mexico, Part 2. New Mexico Bureau of Mines and Mineral Resources Bulletin*, **114**, 35-44.
168. COBBAN, W.A. 1988. The Upper Cretaceous ammonite *Watinoceras* WARREN in the Western Interior of the United States. *U.S. Geological Survey Bulletin*, **1788**, 15 pp.
169. COBBAN, W.A. & SCOTT, G.R. 1988. Occurrence of the Early Cretaceous ammonite *Venezoliceras* in Puerto Rico. *U.S. Geological Survey Bulletin*, **1837-D**, DI-D2.
170. COBBAN, W.A. 1988. Ammonites in clasts of the Juana Lopez Member of the Carlile Shale (Upper Cretaceous) near Pueblo, Colorado. *U.S. Geological Survey Bulletin*, **1837-E**, EI-E5.
171. KENNEDY, W.J. & COBBAN, W.A. 1988. *Litophragmatoceras incomptum* gen. et sp. nov. (Cretaceous Ammonoidea), a cryptic micromorph from the upper Cenomanian of Arizona. *Geological Magazine*, **125** (5), 535-539.
172. KENNEDY, W.J., COBBAN, W.A. & HOOK, S.C. 1988. *Hourcquia* Collignon, 1965 (Cretaceous Ammonoidea) from the upper Turonian of the southern United States. *Paläontologische Zeitschrift*, **62** (1/2), 87-93.
173. KENNEDY, W.J. & COBBAN, W.A. 1988. *Nebraskites haresiceratiforme* n. g. n. sp., a new ammonite from the mid-Turonian *Prionocyclus percarinatus* zone in Nebraska, United States. *Neues Jahrbuch für Geologie und Paläontologie, Monatshefte*, **10**, 581-586.
174. KENNEDY, W.J. & COBBAN, W.A. 1988. Mid-Turonian ammonite faunas from northern Mexico. *Geological Magazine*, **125** (6), 593-612.
175. COBBAN, W.A. 1988. *Tarrantoceras* STEPHENSON and related ammonoid genera from Cenomanian (Upper Cretaceous) rocks in Texas and the Western Interior of the United States. *U.S. Geological Survey Professional Paper*, **1473**, 30 pp.
176. COBBAN, W.A., HOOK, S.C. & KENNEDY, W.J. 1989. Upper Cretaceous rocks and ammonite faunas of southwestern New Mexico. *New Mexico Bureau of Mines and Mineral Resources Memoir*, **45**, 137 p.

177. COBBAN, W.A. & KENNEDY, W.J. 1989. The ammonite *Metengonoceras* HYATT, 1903, from the Mowry Shale (Cretaceous) of Montana and Wyoming. *U.S. Geological Survey Bulletin*, **1787-L**, L1-L11.
178. COBBAN, W.A. & KENNEDY, W.J. 1989. A note on the occurrence of *Allocrioceras billinghursti* KLINGER, 1976 (Cretaceous Ammonoidea) in the middle Turonian of the Western Interior of the United States. *Cretaceous Research*, **10**, 173-175.
179. COBBAN, W.A. & HOOK, S.C. 1989. Mid-Cretaceous molluscan record from west-central New Mexico. *In*: New Mexico Geological Society 40th Annual Field Conference Guidebook, Southeastern Colorado Plateau, pp. 247-264.
180. COBBAN, W.A. & KENNEDY, W.J. 1989. *Acompsoceras inconstans* zone, a lower Cenomanian marker horizon in Trans-Pecos Texas, U.S.A. *Neues Jahrbuch für Geologie und Paläontologie Abhandlungen*, **178** (2), 133-145.
181. KENNEDY, W.J., COBBAN, W.A., HANCOCK, J.M. & HOOK, S.C. 1989. Biostratigraphy of the Chispa Summit Formation at its type locality, a Cenomanian through Turonian reference section for Trans-Pecos Texas. *Bulletin of the Geological Institutions of the University of Uppsala, N.S.*, **15**, 39-119.
182. KENNEDY, W.J. & COBBAN, W.A. 1990. Cenomanian micromorphic ammonites from the Western Interior of the USA. *Palaeontology*, **33** (2), 379-422.
183. KENNEDY, W.J. & COBBAN, W.A. 1990. Cenomanian ammonite faunas from the Woodbine Formation and lower part of the Eagle Ford Group, Texas. *Palaeontology*, **33** (1), 75-154.
184. TYSDAL, R.G., DYMAN, T.S., NICHOLS, D.J. & COBBAN, W.A. 1990. Correlation chart of Frontier Formation from Greenhorn Range, southwestern Montana, to Mount Everts in Yellowstone National Park, Wyoming, U.S. Geological Survey Miscellaneous Field Studies Map MF-2116, separate text.
185. COBBAN, W.A. & KENNEDY, W.J. 1990. Variation and ontogeny of *Calycoceras* (*Proeucalycoceras*) *canitaurinum* (HAAS, 1949) from the Upper Cretaceous (Cenomanian) of the Western Interior of the United States. *U.S. Geological Survey Bulletin*, **1881-B**, BI-B7.
186. KENNEDY, W.J. & COBBAN, W.A. 1990. Observations on the Cenomanian (Upper Cretaceous) ammonite *Calycoceras* (*Calycoceras*) *obrieni* YOUNG, 1957 from Arizona and New Mexico. *U.S. Geological Survey Bulletin*, **1881-C**, C1-C4.
187. KENNEDY, W.J. & COBBAN, W.A. 1990. The Madagascar ammonite *Neogauthiericeras* COLLIGNON, 1969 from the Upper Cretaceous (Campanian) of Texas. *Palaeontologische Zeitschrift*, **64** (1/2), 57-61.
188. COBBAN, W.A. & KENNEDY, W.J. 1990. *Rhamphidoceras saxatilis* n. gen. and sp., a micromorph ammonite from the lower Turonian of Trans-Pecos Texas. *Journal of Paleontology*, **64** (4), 666-668.
189. COBBAN, W.A. & KENNEDY, W.J. 1990. Upper Cenomanian ammonites from the Woodbridge Clay Member of the Raritan Formation in New Jersey. *Journal of Paleontology*, **64** (5), 845-846.
190. COBBAN, W.A. 1990. Ammonites and some characteristic bivalves from the Upper Cretaceous Frontier Formation, Natrona County, Wyoming. *U.S. Geological Survey Bulletin*, **1917-B**, 13 pp.
191. COBBAN, W.A. 1990. *Sciponoceras gracile* (SHUMARD), common Upper Cretaceous guide fossil in New Mexico. *New Mexico Geology*, **12** (4), 90-91.
192. KENNEDY, W.J. & COBBAN, W.A. 1991. Stratigraphy and interregional correlation of the Cenomanian-Turonian transition in the Western Interior of the United States near Pueblo, Colorado, a potential boundary stratotype for the base of the Turonian stage. *Newsletter on Stratigraphy*, **24**, 1-33.
193. MOLENAAR, C.M. & COBBAN, W.A. 1991. Middle Cretaceous stratigraphy on the south and east sides of the Uinta Basin, northeastern Utah and northwestern Colorado. *U.S. Geological Survey Bulletin*, **1787-P**, 34 pp.
194. COBBAN, W.A. & KENNEDY, W.J. 1991. A giant scaphite from the Turonian (Upper Cretaceous) of the Western Interior of the United States. *U.S. Geological Survey Bulletin*, **1934-A**, AI-A2.
195. COBBAN, W.A. & KENNEDY, W.J. 1991. Evolution and biogeography of the Cenomanian (Upper Cretaceous) ammonite *Metoicoceras* HYATT, 1903, with a revision of *Metoicoceras praecox* HAAS, 1949. *U.S. Geological Survey Bulletin*, **1934-B**, B1-B11.
196. COBBAN, W.A. & KENNEDY, W.J. 1991. *Baculites thomi* REESIDE, 1927, an Upper Cretaceous ammonite in the Western Interior of the United States. *U.S. Geological Survey Bulletin*, **1934-C**, CI-C8.
197. MOLENAAR, C.M. & COBBAN, W.A. 1991. Middle Cretaceous stratigraphy on the south side of the Uinta Basin, east-central Utah. *In*: T.C. CHIDSEY, Jr. (Ed.), Geology of east-central Utah. *Utah Geological Association Publication*, **19**, 29-43.
198. COBBAN, W.A. 1991. Occurrence and significance of the middle Turonian (Upper Cretaceous) belemnite *Actinocamax* in central western Montana. *U.S. Geological Survey Bulletin*, **1962-C**, 21-26.

199. DYMAN, T.S., HALEY, J.C., PERRY, W.J., TYSDAL, R.G., NICHOLS, D.J. & COBBAN, W.A. 1991. Redefinition of Frontier Formation; Beaverhead Group contact, Lima Peaks area, southwestern Montana and southeastern Idaho. *In: Contributions to Late Cretaceous stratigraphy and paleontology, western Montana. U.S. Geological Survey Bulletin*, **1962**, 1-7.
200. COBBAN, W.A. & KENNEDY, W.J. 1991. *Pachydesmoceras* SPATH, 1922. A Cretaceous ammonite in Colorado. *U.S. Geological Survey Bulletin*, **198**, A1-A3.
201. COBBAN, W.A. & KENNEDY, W.J. 1991. New records of the ammonite subfamily Texanitinae in Campanian (Upper Cretaceous) rocks in the Western Interior of the United States. *U.S. Geological Survey Bulletin*, **1985-B**, B1-B4.
202. COBBAN, W.A. & KENNEDY, W.J. 1991. Some Upper Cretaceous ammonites from the Nacatoch Sand of Hempstead County, Arkansas. *U.S. Geological Survey Bulletin*, **1985-C**, C1-C5.
203. COBBAN, W.A., SKELTON, P.W. & KENNEDY, W.J. 1991. Occurrence of the rudistid *Durania cornupastoris* (DES MOULINS, 1826) in the Upper Cretaceous Greenhorn Limestone in Colorado. *U.S. Geological Survey Bulletin*, **1985-D**, D1-D8.
204. COBBAN, W.A. & KENNEDY, W.J. 1991. Upper Cretaceous (Maastrichtian) ammonites from the *Nostoceras alternatum* zone in southwestern Arkansas. *U.S. Geological Survey Bulletin*, **1985-E**, E1-E6.
205. COBBAN, W.A. & KENNEDY, W.J. 1991. *Pachydiscus* (Ammonoidea) from Campanian (Upper Cretaceous) rocks in the Western Interior of the United States. *U.S. Geological Survey Bulletin*, **1985-F**, F1-F4.
206. KENNEDY, W.J. & COBBAN, W.A. 1991. Coniacian ammonite faunas from the United States Western Interior. *Special Papers in Palaeontology*, **45**, 96 pp.
207. KENNEDY, W.J. & COBBAN, W.A. 1991. Upper Cretaceous (upper Santonian) *Boehmoceras* fauna from the Gulf Coast region of the United States. *Geological Magazine*, **128** (2), 167-189.
208. KENNEDY, W.J. & COBBAN, W.A. 1992. Campanian *Trachyscaphites spiniger* ammonite fauna in northeast Texas. *Palaeontology*, **35** (1), 63-93.
209. FRANCZYK, K.J., FOUCH, T.D., JOHNSON, R.C., MOLENAAR, C.M. & COBBAN, W.A. 1992. Cretaceous and Tertiary paleogeographic reconstructions for the Uinta-Piceance Basin study area, Colorado and Utah. *U.S. Geological Survey Bulletin*, **1787-Q**, Q1-Q37.
210. COBBAN, W.A. & KENNEDY, W.J. 1992. Campanian ammonites from the Upper Cretaceous Gober Chalk of Lamar County, Texas. *Journal of Paleontology*, **66** (3), 440-454.
211. COBBAN, W.A. & KENNEDY, W.J. 1992. The last Western Interior *Baculites* from the Fox Hills Formation of South Dakota. *Journal of Paleontology*, **66** (4), 682-684.
212. KENNEDY, W.J., COBBAN, W.A. & G.R. SCOTT, 1992. Ammonite correlation of the uppermost Campanian of western Europe, the U.S. Gulf Coast, Atlantic Seaboard and Western Interior, and the numerical age of the base of the Maastrichtian. *Geological Magazine*, **129** (4), 497-500.
213. COBBAN, W.A., KENNEDY, W.J. & SCOTT, G.R. 1992. Upper Cretaceous heteromorph ammonites from the *Baculites compressus* zone of the Pierre Shale in north-central Colorado. *U.S. Geological Survey Bulletin*, **2024-A**, A1-A11.
214. KENNEDY, W.J. & COBBAN, W.A. 1993. Maastrichtian ammonites from the Corsicana Formation in northeast Texas. *Geological Magazine*, **130** (1), 57-67.
215. COBBAN, W.A. 1993. Diversity and distribution of Late Cretaceous ammonites, Western Interior, United States, pp. 435-451. *In: W.G.E. CALDWELL & E.G. KAUFFMAN (Eds)*, Evolution of the Western Interior Basin. *Geological Association of Canada Special Paper*, **39**, 435-451.
216. KENNEDY, W.J. & COBBAN, W.A. 1993. Lower Cenomanian *Forbesiceras brundrettei* zone ammonite fauna in Texas, U.S.A. *Neues Jahrbuch für Geologie und Paläontologie Abhandlungen*, **188** (3), 327-344.
217. KENNEDY, W.J. & COBBAN, W.A. 1993. Upper Campanian ammonites from the Ozan-Annona Formation boundary in southwestern Arkansas. *Bulletin of the Geological Society of Denmark*, **40**, 115-148.
218. KENNEDY, W.J. & COBBAN, W.A. 1993. Campanian ammonites from the Annona Chalk near Yancy, Arkansas. *Journal of Paleontology*, **67** (1), 83-97.
219. KENNEDY, W.J. & COBBAN, W.A. 1993. Ammonites from the Saratoga Chalk (Upper Cretaceous), Arkansas. *Journal of Paleontology*, **67** (3), 404-434.
220. KENNEDY, W.J. & COBBAN, W.A. 1993. Lower Campanian (Upper Cretaceous) ammonites from the Merchantville Formation of New Jersey, Maryland, and Delaware. *Journal of Paleontology*, **67** (5), 828-849.
221. IZETT, G.A., COBBAN, W.A., OBRADOVICH, J.D. & KUNK, M.J. 1993. The Manson impact structure; $^{40}\text{Ar}/^{39}\text{Ar}$ age and its distal impact ejecta in the Pierre Shale in southeastern South Dakota. *Science*, **262**, 729-732.

222. COBBAN, W.A. & KENNEDY, W.J. 1993. Middle Campanian ammonites and inoceramids from the Wolfe City Sand in northeastern Texas. *Journal of Paleontology*, **67** (1), 71-82.
223. COBBAN, W.A. & KENNEDY, W.J. 1993. The Upper Cretaceous dimorphic pachydiscid ammonite *Menuites* in the Western Interior of the United States. U.S. *Geological Survey Professional Paper*, **1533**, 14 pp.
224. DYMAN, T.S., COBBAN, W.A., FOX, J.E. & *al.*, 1993. Cretaceous rocks from southwestern Montana to southwestern Minnesota, northern Rocky Mountains, and Great Plains Region. In: G.W. SHURR, G.A. LUDVIGSON & R.B. HAMMOND, Perspectives on the eastern margin of the Cretaceous Western Interior Basin. *Geological Society of America Special Paper*, **287**, 5-26.
225. COBBAN, W.A. 1993. Diversity and distribution of Late Cretaceous ammonites, Western Interior, United States. In: W.G.E. CALDWELL & E.G. KAUFFMAN (Eds), Evolution of the Western Interior Basin. *Geological Association of Canada Special Paper*, **39**, 435-451.
226. HANCOCK, J.M., KENNEDY, W.J. & COBBAN, W.A. 1993. A correlation of the upper Albian to basal Coniacian sequences of northwest Europe, Texas and the United States Western Interior. In: W.G.E. CALDWELL & E.G. KAUFFMAN (Eds), Evolution of the Western Interior Basin. *Geological Association of Canada Special Paper*, **39**, 453-476.
227. COBBAN, W.A., MEREWETHER, E.A., FOUCH, T.D. & OBRADOVICH, J.D. 1994. Some Cretaceous shorelines in the Western Interior of the United States. In: M.V. CAPUTO, J.A. PETERSON, J. A. & K.J. FRANCIZYK (Eds), Mesozoic systems of the Rocky Mountain Region, U.S.A. Rocky Mountain Section of Society for Sedimentary Geology, pp. 393-413.
228. KENNEDY, W.J. & COBBAN, W.A. 1994. Ammonite fauna from the Wenonah Formation (Upper Cretaceous) of New Jersey. *Journal of Paleontology*, **68** (1), 95-110.
229. COBBAN, W.A. & KENNEDY, W.J. 1994. Upper Cretaceous ammonites from the Coon Creek Tongue of the Ripley Formation at its type locality in McNairy County, Tennessee. In: Shorter Contributions to Paleontology and Stratigraphy. U.S. *Geological Survey Bulletin*, **2073-B**, BI-BI2.
230. COBBAN, W.A. & KENNEDY, W.J. 1994. A giant baculite from the upper Campanian and lower Maastrichtian of the Western Interior. U.S. *Geological Survey Bulletin*, **2073-C**, C1-C4.
231. COBBAN, W.A. & KENNEDY, W.J. 1994. Middle Campanian (Upper Cretaceous) ammonites from the Pecan Gap Chalk of central and northeastern Texas. U.S. *Geological Survey Bulletin*, **2073-D**, D1-D9.
232. COBBAN, W.A. & KENNEDY, W.J. 1994. Cenomanian (Upper Cretaceous) nautiloids from New Mexico. U.S. *Geological Survey Bulletin*, **2073-E**, EI-E3.
233. DYMAN, T.S., MEREWETHER, E.A., MOLENAAR, C.M., COBBAN, W.A., OBRADOVICH, J.D., WEIMER, R.J. & BRYANT, W.A. 1994. Stratigraphic transects for Cretaceous rocks, Rocky Mountains and Great Plains regions. In: M.V. CAPUTO, J.A. PETERSON, J. A. & K.J. FRANCIZYK (Eds), Mesozoic Systems of the Rocky Mountain region, U.S.A. Rocky Mountain Section of Society for Sedimentary Geology, pp. 365-391.
234. KENNEDY, W.J. & COBBAN, W.A. 1994. Upper Campanian ammonites from the Mount Laurel Sand at Biggs Farm, Delaware. *Journal of Paleontology*, **68** (6), 1285-1305.
235. COBBAN, W.A. 1995. Occurrence of the free-swimming Upper Cretaceous crinoids *Uintacrinus* and *Marsupites* in the Western Interior of the United States. U.S. *Geological Survey Bulletin*, **2113-C**, 1C-6C.
236. DYMAN, T.S., PORTER, K.W., TYSDAL, R.G., COBBAN, W.A. & *al.* 1995. West-east stratigraphic transect of Cretaceous rocks in the northern Rocky Mountains and Great Plains regions, southwestern Montana to southwestern Minnesota. U.S. Geological Survey Miscellaneous Investigations Series Map 1-2474-A.
237. COBBAN, W.A. & KENNEDY, W.J. 1995. Maastrichtian ammonites chiefly from the Prairie Bluff Chalk in Alabama and Mississippi. *Paleontological Society Memoir*, **44**, 40 pp.
238. KENNEDY, W.J., JOHNSON, R.O. & COBBAN, W.A. 1995. Upper Cretaceous ammonite faunas of New Jersey. In: Contributions to the paleontology of New Jersey, J.E.B. BAKER (Ed.). *Geological Association of New Jersey*, **12**, 24-55.
239. MOLENAAR, C.M., NUMMEDAL, D. & COBBAN, W.A. 1996. Regional stratigraphic cross sections of the Gallup Sandstone and associated. Strata around the San Juan Basin, New Mexico, and parts of adjoining Arizona. and Colorado. U.S. Geological Survey Oil and Gas Investigations Chart QC-143.
240. KENNEDY, W.J. & COBBAN, W.A. 1996. Maastrichtian ammonites from the Hornerstown Formation in New Jersey. *Journal of Paleontology*, **70** (5), 798-804.

241. KENNEDY, W.J., COBBAN, W.A. & LANDMAN, N.H. 1996. New records of acanthoceratid ammonoids from the upper Cenomanian of South Dakota. *American Museum Novitates*, **3161**, 18 pp.
242. KENNEDY, W.J., COBBAN, W.A. & LANDMAN, N.H. 1996. Two species of *Placenticeras* (Ammonoidea) from the Upper Cretaceous (Campanian) of the Western Interior of the United States. *American Museum Novitates*, **173**, 13 pp.
243. KLINGER, H.C., COBBAN, W.A. & KENNEDY, W.J. 1996. The lectotype of *Baculites asperoanceps* LASSWITZ, 1904 (Cretaceous ammonite), with a discussion on the affinities of the species. *Acta Geologica Polonica*, **46** (1-2), 99-104.
244. KENNEDY, W.J., LANDMAN, N.H. & COBBAN, W.A. 1996. The Maastrichtian ammonites *Coahuilites sheltoni* BÖSE, 1928, and *Sphenodiscus pleurisepta* (CONRAD, 1857), from the uppermost Pierre Shale and basal Fox Hills Formation of Colorado and Wyoming. *American Museum Novitates*, **3186**, 14 pp.
245. KENNEDY, W.J. & COBBAN, W.A. 1997. Upper Campanian (Upper Cretaceous) ammonites from the Marshalltown Formation – Mount Laurel boundary beds in Delaware. *Journal of Paleontology*, **71** (1), 62-73.
246. KENNEDY, W.J., COBBAN, W.A., LANDMAN, N.H. & JOHNSON, R.O. 1997. New ammonoid records from the Merchantville Formation (Upper Cretaceous) of Maryland and New Jersey. *American Museum Novitates*, **3193**, 17 pp.
247. COBBAN, W.A., KENNEDY, W.J. & SCOTT, G.R. 1997. *Didymoceras puebloense*, a new species of heteromorph ammonite from the upper Campanian of Colorado and Wyoming. *Geobios*, **30** (2), 225-230.
248. KENNEDY, W.J., COBBAN, W.A. & LANDMAN, N.H. 1997. Campanian ammonites from the Tombigbee Sand Member of the Eutaw Formation, the Mooreville Formation, and the basal part of the Demopolis Formation in Mississippi and Alabama. *American Museum Novitates*, **3201**, 44 pp.
249. FASSETT, J.E., COBBAN, W.A. & OBRADOVICH, J.D. 1997. Biostratigraphic and isotopic age of the Huerfani to Bentonite Bed of the Upper Cretaceous Lewis Shale at an outcrop near Regina, New Mexico. In: O.J. ANDERSON, B.S. KUES & S.G. LUCAS (Eds), Mesozoic geology and paleontology of the Four Corners Region. New Mexico Geological Society, 48th Annual Field Conference Guidebook, pp. 229-232.
250. IZETT, G.A., COBBAN, W.A., DALRYMPLE, G.B. & OBRADOVICH, J.D. 1997. ⁴⁰Ar/³⁹Ar age of the Manson Iowa impact structure and coeval impact ejecta in the Crow Creek Member of the Pierre Shale, South Dakota and Nebraska. U.S. Geological Survey Open-File Report 97-523, 49 pp.
251. KENNEDY, W.J., COBBAN, W.A. & LANDMAN, N.H. 1997. Maastrichtian ammonites from the Severn Formation of Maryland. *American Museum Novitates*, **3210**, 30 pp.
252. COBBAN, W.A. & LARSON, N.L. 1997. Marine Upper Cretaceous rocks and their ammonite record along the northern flank of the Black Hills uplift, Montana, Wyoming, and South Dakota. *University of Wyoming Contributions to Geology*, **32** (1), 27-35.
253. PORTER, K.W., DYMAN, T.S., THOMPSON, G.G., LOPEZ, D.A. & COBBAN, W.A. 1997. Six outcrop sections of the marine Lower Cretaceous, central Montana, with a section on palynomorph stratigraphy and age of a late Albian lowstand. *Montana Bureau of Mines and Geology Report of Investigations*, **3**, 26 pp.
254. IZETT, G.A., COBBAN, W.A., DALRYMPLE, G.B. & OBRADOVICH, J.D. 1998. ⁴⁰Ar/³⁹Ar age of the Manson impact structure, Iowa, and correlative impact ejecta in the Crow Creek Member of the Pierre Shale (Upper Cretaceous), South Dakota and Nebraska. *Geological Society of America Bulletin*, **110** (3), 361-376.
255. KENNEDY, W.J., LANDMAN, N.H. & COBBAN, W.A. 1998. Engonoceratid ammonites from the Glen Rose Limestone, Walnut Clay, Goodland Limestone, and Comanche Peak Limestone (Albian) in Texas. *American Museum Novitates*, **3221**, 40 pp.
256. MEREWETHER, E.A., TILLMAN, R.W., COBBAN, W.A. & OBRADOVICH, J.D. 1998. outcrop sections of the Upper Cretaceous Frontier Formation, southeastern Bighorn Basin, Wyoming. In: W.R. KEEFER & J.E. GOOLSBY (Eds), Cretaceous and lower Tertiary rocks of the Bighorn Basin, Wyoming and Montana. Wyoming Geological Association 49th Guidebook, pp. 31-42.
257. MEREWETHER, E.A., HUFF, M.C., COBBAN, W.A. & SKIPP, G.L. 1998. Stratigraphy of a marine sandstone in the Upper Cretaceous Frontier Formation, Johnson and Natrona Counties, Wyoming. In: W.R. KEEFER & J.E. GOOLSBY (Eds), Cretaceous and lower Tertiary rocks of the Bighorn Basin, Wyoming and Montana. Wyoming Geological Association 49th Guidebook, pp. 43-58.
258. KENNEDY, W.J. & COBBAN, W.A. 1998. *Chesapeakeiceras*, new name for *Chesapeakekella* KENNEDY & COBBAN, 1993 (September 14), not *Chesapeakekella*

- CAMPBELL, 1993 (June 13). *Journal of Paleontology*, **72** (2), 403.
259. PORTER, K.W., DYMAN, T.S., COBBAN, W.A. & REINSAN, G.E. 1998. Post-Manville/Kootenai Lower Cretaceous rocks and reservoirs, south-central Montana, southern Alberta and Saskatchewan. *In*: J.E. CHRISTOPHER & *al.*, (Eds), Eighth International Williston Basin Symposium. *Saskatchewan Geological Society Special Publication*, **13**, 123-127.
260. KENNEDY, W.J., COBBAN, W.A., GALE, A.S., HANCOCK, J.M. & LANDMAN, N.H. 1998. Ammonites from the Weno Limestone (Albian) in northeast Texas. *American Museum Novitates*, **3236**, 46 pp.
261. KENNEDY, W.J., LANDMAN, N.H., CHRISTENSEN, W.K., COBBAN, W.A. & HANCOCK, J.M. 1998. Marine connections in North America during the late Maastrichtian; palaeogeographic and palaeobiogeographic significance of *Jeletzkytes nebrascensis* Zone cephalopod fauna from the Elk Butte Member of the Pierre Shale, SE South Dakota and NE Nebraska. *Cretaceous Research*, **9**, 745-775.
262. WALASZCZYK, I. & COBBAN, W.A. 1998. The Turonian-Coniacian boundary in the United States Western Interior. *Acta Geologica Polonica*, **48** (4), 495-507.
263. KENNEDY, W.J. & COBBAN, W.A. 1999. Campanian (Late Cretaceous) ammonites from the Bergstrom Formation in central Texas. *Acta Geologica Polonica*, **49** (1), 67-80.
264. COBBAN, W.A., 1999. Book review of WARD, P. D., *Time Machines: Scientific Explorations in Deep Time*: Elsevier Press, 2 p.
265. KENNEDY, W.J., COBBAN, W.A. & LANDMAN, N.H. 1999. The heteromorph ammonite *Didymoceras cochleatum* (MEEK & HAYDEN, 1858) from the Pierre Shale of South Dakota and Wyoming. *American Museum Novitates*, **3268**, 8 pp.
266. LANDMAN, N.H., LANE, J., COBBAN, W.A., JORGENSEN, S.D., KENNEDY, W.J. & LARSON, N.L. 1999. Impressions of the attachment of the soft body to the shell in Late Cretaceous pachydiscid ammonites from the Western Interior of the United States. *American Museum Novitates*, **3273**, 31 pp.
267. COBBAN, W.A., KENNEDY, W.J. & LANDMAN, N.H. 1999. *Platyscaphites*, a new ammonite from the Lower Campanian (Upper Cretaceous) of the United States Western Interior. *In*: A.V. DHONDT & A.S. ALEKSEEV (Eds), D.P. Naidin Festschrift. *Sciences de la Terre Aardwetenschappen, Bulletin de l'Institut Royal des Sciences Naturelles de Belgique*, **69**, supplement A, 47-54.
268. KENNEDY, W.J. & COBBAN, W.A. 1999. *Pachydiscus* (*Pachydiscus*) *hornbyense* JONES, 1963, and *P. (P.) catarinae* (ANDERSON & HANNA, 1935) (Cretaceous, Campanian; Ammonoidea), Pacific realm marker fossils in the Western Interior Seaway of North America. *In*: A.V. DHONDT & A.S. ALEKSEEV (Ed.), D.P. Naidin Festschrift. *Sciences de la Terre Aardwetenschappen, Bulletin de l'Institut Royal des Sciences Naturelles de Belgique*, **69**, supplement A, 119-127.
269. KENNEDY, W.J., GALE, A.S., HANCOCK, J.M., CRAMPTON, J.S. & COBBAN, W.A. 1999. Ammonites and inoceramid bivalves from close to the middle-upper Albian Boundary around Fort Worth, Texas. *Journal of Paleontology*, **73** (6), 1101-1125.
270. KENNEDY, W.J., COBBAN, W.A., ELDER, W.P. & KIRKLAND, J.I. 1999. Lower Turonian (Upper Cretaceous) *Watinoceras devonense* Zone ammonite fauna in Colorado, USA. *Cretaceous Research*, **20**, 629-639.
271. KENNEDY, W.J., COBBAN, W.A. & SCOTT, G.R. 2000. Heteromorph ammonites from the Upper Campanian (Upper Cretaceous) *Baculites cuneatus* and *Baculites reesidei* zones of the Pierre Shale in Colorado, USA. *Acta Geologica Polonica*, **50** (1), 1-20.
272. KENNEDY, W.J. & COBBAN, W.A. 2000. Maastrichtian (Late Cretaceous) ammonites from the Owl Creek Formation in northeastern Mississippi, U.S. A. *Acta Geologica Polonica*, **50** (1), 175-190.
273. KENNEDY, W.J., LANDMAN, N.H., COBBAN, W.A. & SCOTT, G.R. 2000. Late Campanian (Cretaceous) heteromorph ammonites from the Western Interior of the United States. *Bulletin of the American Museum of Natural History*, **251**, 88 pp.
274. KENNEDY, W.J., COBBAN, W.A. & SCOTT, G.R. 2000. Heteromorph ammonites from the middle Campanian *Baculites scotti* Zone in the U.S. Western Interior. *Acta Geologica Polonica*, **50** (2), 223-241.
275. KENNEDY, W.J., WALASZCZYK, I. & COBBAN, W.A. 2000. Pueblo, Colorado, USA, candidate Global Boundary Stratotype Section and Point for the base of the Turonian Stage of the Cretaceous, and for the base of the Middle Turonian Substage, with a revision of the Inoceramidae (Bivalvia). *Acta Geologica Polonica*, **50** (3), 295-334.
276. COBBAN, W.A., DYMAN, T.S., POLLOCK, G.L., TAKAHASHI, K.I., DAVIS, L.E. & RIGGIN, D.B. 2000. Inventory of dominantly marine and brackish-water fossils from Late Cretaceous rocks in and near Grand Staircase Escalante National Monument, Utah. *In*: D.A. SPRINKEL, T.C. CHIDSEY, JR. & P.B.

- ANDERSON (Eds), *Geology of Utah's Parks and Monuments. Utah Geological Association Publication*, **28**, 579-589.
277. DYMAN, T.S., PORTER, K.W., TYSDAL, R.G., COBBAN, W.A. & OBRADOVICH, J.D. 2000. Late Albian Blackleaf and Thermopolis-Muddy sequence in southwestern Montana and correlation with time-equivalent strata in west-central Montana. *In*: R.A. SCHALLA & E.H. JOHNSON (Eds), *Montana/Alberta thrust belt and adjacent foreland*, v. 1. Montana Geological Society, 50th Anniversary Symposium, pp. 65-81.
278. WALASZCZYK, I. & COBBAN, W.A. 2000. Inoceramid faunas and biostratigraphy of the upper Turonian lower Coniacian of the Western Interior of the United States. *Special Papers in Palaeontology*, **64**, 118 pp.
279. KENNEDY, W.J., N.H. LANDMAN, COBBAN, W.A. & JOHNSON, R.O. 2000. Additions to the ammonite fauna of the Upper Cretaceous Navesink Formation of New Jersey. *American Museum Novitates*, **3306**, 30 pp.
280. KENNEDY, W.J. & COBBAN, W.A. 2001. Campanian (Late Cretaceous) ammonites from the upper part of the Anacacho Limestone in south-central Texas. *Acta Geologica Polonica*, **51** (1), 15-30.
281. KENNEDY, W.J., LANDMAN, N.H. & COBBAN, W.A. 2001. Santonian ammonites from the Blossom Sand in northeast Texas. *American Museum Novitates*, **3332**, 9 pp.
282. EATON, J.G., LAURIN, J., KIRKLAND, J.I., TIBERT, N.E., LECKIE, R.M., SAGEMAN, B.B., GOLDSTRAND, P.M., MOORE, D.W., STRAUB, A.W., COBBAN, W.A. & DALEBOUT, J.D. 2001. Cretaceous and early Tertiary geology of Cedar and Parowan Canyons, western Markagunt Plateau, Utah. *In*: M.C. ERSKINE (Ed.), *The geologic transition, high plateaus to Great Basin, a symposium and field guide: The Mackin Volume. Utah Geological Association Publication*, **30**, 337-363.
283. WALASZCZYK, I., COBBAN, W.A. & HARRIES, P.J. 2001. Inoceramids and inoceramid biostratigraphy of the Campanian and Maastrichtian of the United States Western Interior Basin. *Revue de Paléobiologie, Geneve*, **20** (1), 117-234.
284. ODIN, G.S. & COBBAN, W.A. 2001. Europe-America connection; palaeontological identification of some ammonites from Tercis les Bains (Landes, France). *Developments in Palaeontology and Stratigraphy. In*: G.S. ODIN (Ed.), *The Campanian-Maastrichtian stage boundary; characterization at Tercis les Bains (France) and correlation with Europe and other continents*, 19, 483-486.
285. ODIN, G.S., COURVILLE, P., MACHALSKI, M. & COBBAN, W.A. 2001. The Campanian-Maastrichtian ammonite fauna Tercis (Landes, France); a synthetic view. *Developments in Palaeontology and Stratigraphy. In*: G.S. ODIN (Ed.), *The Campanian-Maastrichtian stage boundary; characterisation at Tercis les Bains (France) and correlation with Europe and other continents*, 19, 550-567.
286. KENNEDY, W.J., COBBAN, W.A. & LANDMAN, N.H. 2001. A revision of the Turonian members of the ammonite Subfamily Collignoniceratinae from the United States Western Interior and Gulf Coast. *Bulletin of the American Museum of Natural History*, **267**, 148 pp.
287. MOLENAAR, C.M., COBBAN, W.A., MEREWETHER, E.A., PILLMORE, C.L., WOLFE, D.G. & HOLBROOK, J.M. 2002. Regional stratigraphic cross sections of Cretaceous rocks from east-central Arizona to the Oklahoma Panhandle. U.S. Geological Survey Miscellaneous Field Studies Map MF-2382, 3 sheets.
288. DYMAN, T.S., COBBAN, W.A., DAVIS, L.E., EEVES, R.L., POLLOCK, G.L., OBRADOVICH, J.D., TITUS, A.L., TAKAHASHI, K.I., HESTER, T.C. & CANTU, D. 2002. Upper Cretaceous marine and brackish water strata at Grand Staircase-Escalante National Monument, Utah. Geological Society of America Field Trip Road Log, May 2002, pp. 172-198. *In*: *Field Guide to Geologic Excursions in Southwestern Utah and Adjacent Areas of Arizona and Nevada. Geological Society of America, Rocky Mountain Section Meeting, Cedar City, Utah, May 7-9, 2002.*
289. AMEDRO, F., COBBAN, W.A., BRETON, G. & RROGRON, P. 2002. *Metengoceras teigenense* COBBAN & KENNEDY, 1989; une ammonite exotique d'origine Nord-Américaine dans le Cénomaniens inférieur de Basse-Normandie (France). *Bulletin Trimestriel de la Société Géologique Normandie et des Amis du Muséum d' Havre*, **87** (4), 5-28.
290. WALASZCZYK, I., COBBAN, W.A. & ODIN, G.S. 2002. The inoceramid succession across the Campanian-Maastrichtian Boundary. *Bulletin of the Geological Society of Denmark*, **49**, 53-60.
291. HENDERSON, R.A., KENNEDY, W.J. & COBBAN, W.A. 2002. Perspectives of ammonite paleobiology from shell abnormalities in the genus *Baculites*. *Lethaia*, **35**, 215-230.
292. KENNEDY, W.J., COBBAN, W.A. & KLINGER, H.C. 2002. Muscle attachment and mantle-related features in Upper Cretaceous *Baculites* from the United States Western Interior. *In*: *Cephalopods – Present*

- and Past. *Abhandlungen der Geologischen Bundesanstalt*, **57**, 89-112.
293. KENNEDY, W.J., LANDMAN, N.H., COBAN, W.A. & LARSON, N.L. 2002. Jaws and radulae in *Rhaeboceras*, a Late Cretaceous ammonite. *In: Cephalopods – Present and Past. Abhandlungen der Geologischen Bundesanstalt*, **57**, 113-132.
294. HARRIES, P.J., JOHNSON, K.R., COBBAN, W.A. & NICHOLS, D.J. 2002. (Comment) Marine Cretaceous-Tertiary boundary section in southwestern South Dakota. *Geology*, **30** (10), 954-955.
295. LANDMAN, N.H. & COBAN, W.A. 2003. Ammonites from the upper part of the Pierre Shale and Fox Hills Formation of Colorado. *American Museum Novitates*, **3388**, 45 pp.
296. HENDERSON, R.A., KENNEDY, W.J. & COBBAN, W.A. 2003. Formation of wrinkled shell surfaces in ammonites; a reply to Checa. *Lethaia*, **36** (3), 175-176.
297. COBBAN, W.A. 2004. Digital catalog of Western Interior Cretaceous mollusks in the U.S. Geological Survey (14,000 localities).
298. COBBAN, W.A., SAWYER, D. & MCKINNEY, K.C. 2004. Cross section of Upper Cretaceous rocks (Dakota Sandstone-Point Lookout Sandstone) from Gallup to Lamy, northern New Mexico. U.S. Geological Survey, Open-File Report-2004-1903.
299. MCKINNEY, K.C., COBBAN, W.A. & PHAN, N.T. 2004. GIS application of the newly digitized USGS-Denver Cretaceous fossil mollusk collection. U.S. Geological Survey, Open-File Report-2004-1903.
300. KENNEDY, W.J., HANCOCK, J.M., COBAN, W.A. & LANDMAN, N.H. 2004. A revision of the ammonite types described in F. ROEMER, Die Kreidebildungen von Texas und ihre organischen Einschlüsse (1852). *Acta Geologica Polonica*, **54** (4), 433-445.
301. KENNEDY, W.J., WALASZCZYK, I. & COBBAN, W.A. 2005. The global boundary stratotype section and point for the base of the Turonian stage of the Cretaceous: Pueblo, Colorado, U.S.A. *Episodes*, **28** (2), 93-104.
302. COBBAN, W.A., DYMAN, T.S. & PORTER, K.W. 2005. Paleontology and stratigraphy of upper Coniacian-middle Santonian ammonite zones and application to erosion surfaces and marine transgressive strata in Montana and Alberta. *Cretaceous Research*, **26**, 429-449.
303. KENNEDY, W.J., COBBAN, W.A., HANCOCK, J.M. & GALE, A.S. 2005. Upper Albian and lower Cenomanian ammonites from the Main Street Limestone, Grayson Marl and Del Rio Clay in northeast Texas. *Cretaceous Research*, **26**, 349-428.
304. LANDMAN, N.H., TSUITA, C.J., COBBAN, W.A., LARSON, N.L., TANABE, K. & FLEMMING, R.L. 2006. Jaws of Late Cretaceous placenticeratid ammonites; How preservation affects the interpretation of morphology. *American Museum Novitates*, **3500**, 48 pp.
305. COBBAN, W.A., WALASZCZYK, I., OBRADOVICH, J.D. & MCKINNEY, K.C. 2006. A USGS Zonal table for the Upper Cretaceous middle Cenomanian-Maastrichtian of the Western Interior of the United States based on ammonites, inoceramids, and radiometric ages, U.S. Geological Survey, Open-File Report 2006-1250, 46 pp.
306. WALASZCZYK, I. & COBBAN, W.A. 2006. Palaeontology and biostratigraphy of the Middle – Upper Coniacian and Santonian inoceramids of the US Western Interior. *Acta Geologica Polonica*, **56** (3), 241-348.
307. WALASZCZYK, I. & COBBAN, W.A. 2007. Inoceramids and biostratigraphy of the middle, upper Coniacian – middle Santonian of the Pueblo section (SE Colorado, US Western Interior). *Cretaceous Research*, **28**, 132-142.
308. LANDMAN, N.H., LARSON, N.L. & COBBAN, W.A. 2007 (in press). Jaws and radula of baculites from the Upper Cretaceous (Campanian) of North America: *In: N.H. LANDMAN, R.A. DAVIS & R.H. MAPES (Eds), Cephalopods Present and Past: New Insights and Fresh Perspectives, Springer-Verlag; Dordrecht, The Netherlands.*
309. LANDMAN, N.H. & COBBAN, W.A. 2007 (in press). Ammonite touch marks in Upper Cretaceous (Cenomanian-Santonian) deposits of the Western Interior Seaway: *In: N.H. LANDMAN, R.A. DAVIS & R.H. MAPES (Eds), Cephalopods Present and Past: New Insights and Fresh Perspectives, Springer-Verlag; Dordrecht, The Netherlands.*