between subbasins, with the aid of additional core and density-log control, the history of the Middle Devonian basin has been reconstructed.

BERESKIN, S. ROBERT, Dept. Geology, California State Univ., Fresno, Calif.

ENVIRONMENTAL SIGNIFICANCE OF CERTAIN YELLOW-BROWN DOLOMITES, GREAT BASIN, CALIFORNIA AND NEVADA

Within the dominantly gray limestone and dolomite sequences of the Great Basin, sporadic yellow-brown dolomite is present as discrete beds, lentils, or wisps—the latter imparting a mottled or pseudobrecciated appearance. These distinct deposits, studied in Ordovician, Devonian, Pennsylvanian, and Triassic formations, are fine grained, are usually unfossiliferous, and possess a less than 5 percent terrigenous fraction of well-rounded quartz and sparse feldspar. Laminations, desiccation polygons, and possible relict bird's-eye structures also are apparent.

Stratigraphically, these deposits commonly overlie dolomite sequences several hundreds of feet thick and are in turn overlain by limestone sequences of varied thicknesses. The persistent occurrence of these yellow-brown dolomites at the top of dolomitized sequences possibly indicates that the yellow-brown lithology represents supratidal or penecontemporaneous dolomitization from which seepage-refluxion brines ultimately descend. The underlying rocks commonly are coarser grained, contain normal marine fossils, and reveal gravity-controlled dolomitization structures. In some cases where yellow-brown deposits are incorporated in a completely dolomitized interval, the beds below the lowest yellow-brown horizon reveal multiple dolomitization.

BERGMAN, DENZIL W., Knox Bergman Shearer Corp., Denver, Colo.

COLOR PHOTOGRAPHY AND ITS APPLICATION TO NATURAL RESOURCE EXPLORATION

Color photography has added a new dimension to the field of remote sensing and its application to natural-resource exploration. The color differentiation allows the photogeologist to go much further in the details of his interpretation than he could with black-and-white photography. Additional structural implications also can be mapped. In the mineral field, color anomaly evaluations have proved valuable.

Color photography has been used successfully in exploration for uranium, coal, and base metals, as well as oil and gas. It has become an important detection tool in the fields of ecology and environment. Maximum use has been in the mineral field, although I feel there is more use to be made by the oil and gas industry if color photography is properly applied, and it certainly will be applied more to detect ecologic problems.

Color photography has not had widespread use outside the United States; however, I feel that this will be remedied in the near future. Part of the problem is lack of first-class processing and printing facilities in many countries. Regardless of all the other more exotic remote-sensing methods, I believe the future will see a tremendous increase in the use of color photography in many fields.

BIRD, W. E.

"VIBROSEIS" EVOLUTION IN CALIFORNIA

The "Vibroseis" system of exploration received extensive use during its early development in the Los Angeles basin. Later CDP efforts were hampered by increased urbanization. "Vibroseis" CDP examples demonstrate some of the results of an exploration program over a large part of the San Joaquin Valley. One partial solution is demonstrated for weathering control for surface source data. Examples of higher effort "Vibroseis" data in more complicated areas conclude the 15-year evolution.

BISSELL, HAROLD J., Dept. Geology, Brigham Young Univ., Provo, Utah

TECTONIC CONTROL OF LATE PALEOZOIC AND EARLY MESOZOIC SEDIMENTATION NEAR HINGE LINE OF CORDILLERAN MIOGEOCLINE

Pennsylvanian, Permian, and Lower Triassic strata in the eastern Great Basin aggregate about 35,000 ft of dominantly marine clastic and carbonate rocks that accumulated in the eastern part of the Cordilleran miogeocline. Subsidence and hypersubsidence created the Sublett, Oquirrh, Arcturus, Park City, Bird Springs, and other sedimentary basins within this major downwarp of the earth's crust. Late Paleozoic and early Mesozoic tectonism within and adjacent to the miogeocline controlled contrasting realms of clastic and carbonate sedimentation. Highlands in western and northwestern Utah, in eastern and northeastern Nevada, and in southern Nevada, certain orogenic belts (*e.g.*, Sonoma) were stripped, in places to their Precambrian cores, and provided abnormal thicknesses of sediment to adjacent mobile negative depocenters. The craton east of the tectonic hinge line provided additional sediment.

The Cordilleran miogeocline did not close its doors in chaotic orogenic spasms at the end of the Paleozoic. Contrarily, the changeover from Permian to Early Triassic was not a major diastrophic event. A paraconformity typifies the boundary at many places, with disconformities elsewhere. Up to 4,000 ft of Early Triassic sediments accumulated; by Middle Triassic time, a major reversal occurred: what had been a major negative mobile belt since late Precambrian time was now uplifted, although the region east of the hinge line became negative, and the hinge line was a fulcrum. The Cordilleran miogeocline was destroyed, and some of its sediments were stripped away, only to be recycled and deposited in the Rocky Mountain geosyncline on the east.

BORGESE, E. M.

WHAT IS THE ENVIRONMENT?

No abstract available.

BOUMA, ARNOLD H., Dept. Oceanography, Texas A&M Univ., College Station, Tex.

MARINE GEOLOGIC ASPECTS OF AMERICAN MEDITERRANEAN

The Gulf of Mexico and the Caribbean Sea, also known as the American Mediterranean, contain examples representative of most of the types of geologic phenomena present in the world's oceans.

Although these water bodies are relatively small and accessible to many research vessels, major geologic problems are still unanswered, in spite of the many data that have been collected. The tectonic complexity of the region apparently does not fit seafloor-spreading ideas. The major tectonic trends and the present position of Cuba, partly sandwiched between the carbonate areas of Florida and Yucatan, strongly influence the different genetic interpretations of the American Mediterranean. The extensive salt diapirism and its influence on the history of a major part of the Gulf of Mexico continental margin, as well as on the knolls and ridges, have resulted in many opinions on the origin of salt and the various mechanisms.

Sedimentologically, major observations can be undertaken, ranging from coastal and sea-level variations, aspects of carbonate deposition and pelagic sedimentation, to origin and structure of submarine canyons and the processes of basin filling by turbidity currents. The part of each basin covered by fan deposits is large, and Holocene deposition is still impressive.

Combination of geologic and geophysical studies in these natural laboratories should be promoted by the various government agencies which have jurisdiction over ocean research.