

the key factor in localization of petroleum in most regions.

Cenozoic sedimentary rocks are present only in thin sequences on the south and west coasts. Their possible extent and thickness in offshore areas is hardly more than conjectural. Where presently known, they are generally of only poor to moderate quality from the standpoint of oil prospects.

Mesozoic formations are also relatively small in area and extent. Fairly thin Cretaceous formations, of moderately favorable to unfavorable facies, occur in the Great Artesian, Murray, and Western Australian basins. Marine Jurassic strata are known in the Perth and Carnarvon basins whereas marine to paralic sequences occur in parts of the Great Artesian basin and in the southern coastal basins of Victoria. Triassic sequences are present in several areas in eastern Australia but, again, the lithofacies are generally unfavorable.

Paleozoic sedimentary rocks are widespread. In eastern Australia these sequences possess considerable thickness and variable lithic character but, except for the Permian and part of the Carboniferous, they are commonly altered sufficiently to be judged non-prospective. In central and western Australia, early to middle Paleozoic strata of generally favorable facies are well preserved in several basins.

Late Precambrian (Eocambrian) sedimentary sequences are also widespread in central and western Australia. They are partly of favorable lithofacies, are unmetamorphosed to moderately deformed, and demonstrably contain hydrocarbons and an evaporitic sequence in the Amadeus basin.

Structural traps abound in the basins but, as yet, the key to petroleum accumulations is unknown. Severe deformation does not appear to be responsible for the apparent absence of hydrocarbons on structures tested to date. Time of folding, on the other hand, may be a significant factor in this respect.

Summary:

Cenozoic and Mesozoic prospects are generally slight to moderate; they appear to be best offshore on the western continental shelf, in the Torrens and Bass Straits, and possibly in the Timor Sea. Paleozoic prospects are zero to slight in easternmost Australia; they are poor to good in the Paleozoic basins of the Great Artesian region. Lower to middle Paleozoic prospects are moderate to good in the central and western Australian basins and in the southwestern portion of the Great Artesian basin. Late Proterozoic (Eocambrian) prospects are fair to good in a few basins of central and northwestern Australia.

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J. H. GILREATH, Schlumberger
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"Use of Dipmeter as an Aid in Integrating Subsurface, Structural, and Depositional Features"

Recently developed methods of dipmeter interpretation, utilizing patterns of formation bedding plane dips, define both structural and stratigraphic dips. By using these methods, structural dips of less of less than 1° can be recognized.

Faults may be recognized and defined, both as to direction of dip and strike. Characteristic dip patterns identify bars and channels and define both the strike and direction of shale out of such sand bodies.

Unconformities and disconformities normally exhibit characteristic weathering patterns which makes them readily identifiable. Foreset beds are also readily identified by characteristic dip patterns.

Reef structures can be located and defined by interpretation of the dip patterns found in the overlying beds.

Dipmeter results are currently being used as additional evidence for the confirmation of the presence of shale diapirs.

Confirmation of the subsurface interpretations applied to dipmeter data is supplied by a multitude of outcrop studies from the Rocky Mountain, West Texas and Gulf Coast Provinces.

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December 2, 1963

WARREN B. WEEKS, Phillips
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"The Future of Petroleum Geologists in the United States"

The future for the petroleum geologist in the United States lies wholly in his own hands. If he is waiting for "better times," he has lost the battle. If he is constantly expanding his knowledge and maintains faith in his ability to exploit that knowledge, he has a rosy future.

We as professional petroleum geologists are inseparably tied to an increasingly complex industry. The foremost objective of the oil industry, as with all industries, is to serve the public. To do so it must make a profit that will justify the amount of capital or investment required to establish and maintain the industry. Sometimes we, the hunters, may forget that this industry is entirely dependent upon the raw material which we are continually trying to discover. We can't forget, nor can we let the industry and the