A STUDY OF CARBAZOLE ORGANIC NITROGEN COMPOUNDS, YIELD AND DISTRIBUTION-IMPLICATIONS ON PETROLEUM MIGRATION IN NORTHWESTERN TAIWAN

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The purpose of this study was to examine the carbazole as an indicator of the petroleum expulsion-implications on petroleum migration. Taiwan lies about 150 kilometers off the Fukian coast of the China mainland. It is separated from the latter by the Taiwan Strait which has an average depth of 100 meters. The main island of Taiwan is spindle-shaped, with the longitudinal axis extending roughly north-south for a length of 385 kilometers. The maximum width is 143 kilometers. The Central Range forms the backbone ridge and is the main water divide between the eastern and the western slopes of Taiwan. It bisects Taiwan island into two unequal parts, the western flank being about twice as wide as the eastern flank. Taiwan can be broadly divided into three major geologic provinces: the Central Range, the western foothills and the Coastal Range in eastern Taiwan.

Northwestern Taiwan is the major petroleum province of Taiwan and is believed to contain several trillion cubic feet of gases in place as well as substantial amounts of oils and condensates. Extensive exploration activities have been carried out in this region, with a number of fields being discovered and put into production.

The quantitative study of carbazole organic nitrogen compounds was conducted on a number of terrigenous oil samples from the Pliocene to Oligocene formations in Northwestern Taiwan (Fig. 1). This study provides circumstantial evidence for absorptive interactions of organic nitrogen compounds during petroleum generation, expulsion, and migration. The study suggests that the absolute concentrations and relative distributions of organic nitrogen benzo(a)carbazole/