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Selected bibliography on the association of petroliferous
and non-petroliferous organic materials with uranium
and other metal deposits in sedimentary rocks

by

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INTRODUCTION

A relationship between carbonaceous material and most sandstone-type uranium deposits has been generally established in the literature, but a relationship between petroliferous material and sandstone-type uranium deposits is less certain.

The intent of this bibliography is not to be exhaustive of the subject materials, but rather to provide a representative cross section of available literature. Nevertheless, minor occurrences as well as producing districts are covered. Although the primary emphasis of the bibliography is on uranium, some copper, silver and lead-zinc deposits are included.

There are several processes, both direct and indirect, that relate petroliferous materials to metalliferous deposits. One direct process is the precipitation of metals by organic materials resulting in uraniferous asphaltite like that at Temple Mountain, Utah. Uraniferous asphaltite is considered to be petroleum-derived by some authors (Curiale, 1983; Handford and Granata, 1979; Hawley and others, 1965; Kerr and others, 1955; Pierce and others, 1958, 1964; and Wyant, 1953) and coal-derived by others (Breger, 1955; Breger and Deul, 1955b, 1959; and Haji-Vassiliou and Kerr, 1973). The material is nearly insoluble. It must, to some degree, have suffered in situ radiation damage. It has characteristics that relate it to both coal and petroleum.

Another direct process is for petroleum to act as an ore-bearing medium. This mechanism is especially conjectural because the uranium content of most petroleum is generally considered too low to form uranium deposits.

An indirect process is that hydrogen sulfide migrating from oil or gas pools through faults and fractures precipitates metals in traps. The Palangana salt dome uranium deposits and some of the other south Texas uranium deposits may be examples of this type of mechanism.

Another indirect process is the relation between oil field brines and ore deposits. Such brines have been proposed as ore formers in some Mississippi Valley lead-zinc deposits.

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