

ECONOMIC GEOLOGY

AND THE
BULLETIN OF THE SOCIETY OF
ECONOMIC GEOLOGISTS

VOL. 45

JUNE-JULY, 1950

No. 4

GEOLOGY OF THE FISSIONABLE MATERIALS.¹

GEORGE W. BAIN.

CONTENTS.

	PAGE
ABSTRACT	274
INTRODUCTION	275
General statement of resources	275
General types of occurrence and content	276
Capacity of some geographic occurrences	277
GEOLOGICAL ASSOCIATIONS OF URANIUM	278
Identification of uranium and thorium	278
The uranium and thorium minerals	279
Distribution of uranium and thorium	280
The primary mineral distribution pattern	282
The secondary sedimentary deposits	284
The oxidized secondary deposits	288
TYPES OF URANIUM DEPOSITS	288
Primary deposits	289
General features	289
Pegmatites	290
High temperature fissure veins	290
Mesothermal fissure veins	290
Sedimentary secondary deposits	290
The bituminous shales	291
The alluvial deposits	292
The carnotite-bearing sandstones	293
The oxidized secondary deposits	294
Oxidation in situ	294
Concentrations in adjacent rocks	294
Caliche type of deposit	295
Summary of deposit characteristics	296
Primary deposits	296
Sedimentary secondary deposits	297
Oxidized secondary deposits	297

¹ This article was prepared in 1946 for presentation in abstract at the 75th Anniversary Meeting of the A.I.M.E. and was withdrawn from the program pending clarification of government policy on publication of uranium information. This paper has been reviewed by the Atomic Energy Commission for security.