

International Atomic Energy Agency

IUREP N.F.S. No. 44

August 1977

Distr. LIMITED

Original: ENGLISH

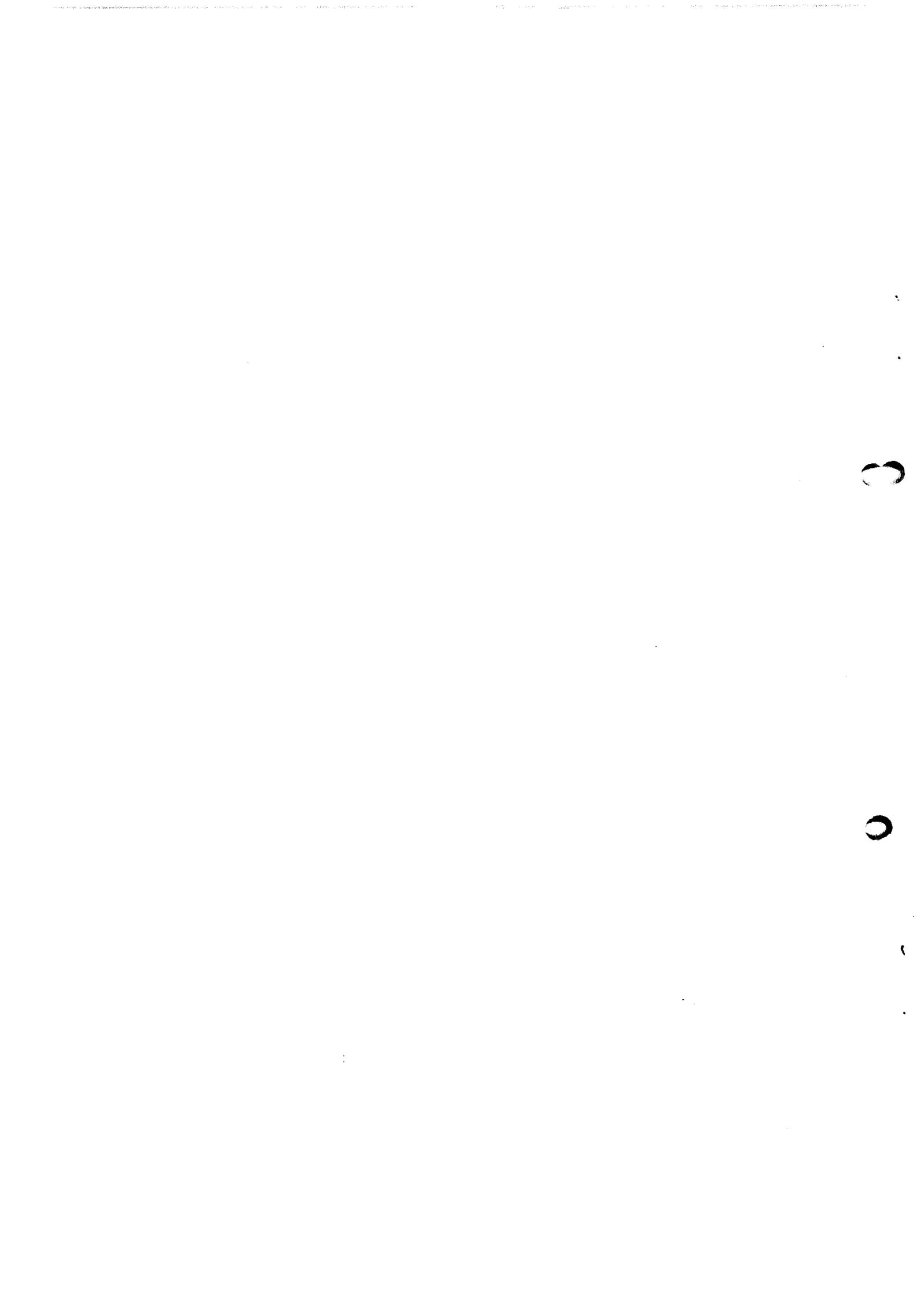
INTERNATIONAL URANIUM RESOURCES EVALUATION PROJECT

I U R E P

NATIONAL FAVOURABILITY STUDIES

HONDURAS

77-7440



INTERNATIONAL URANIUM RESOURCES EVALUATION PROJECT

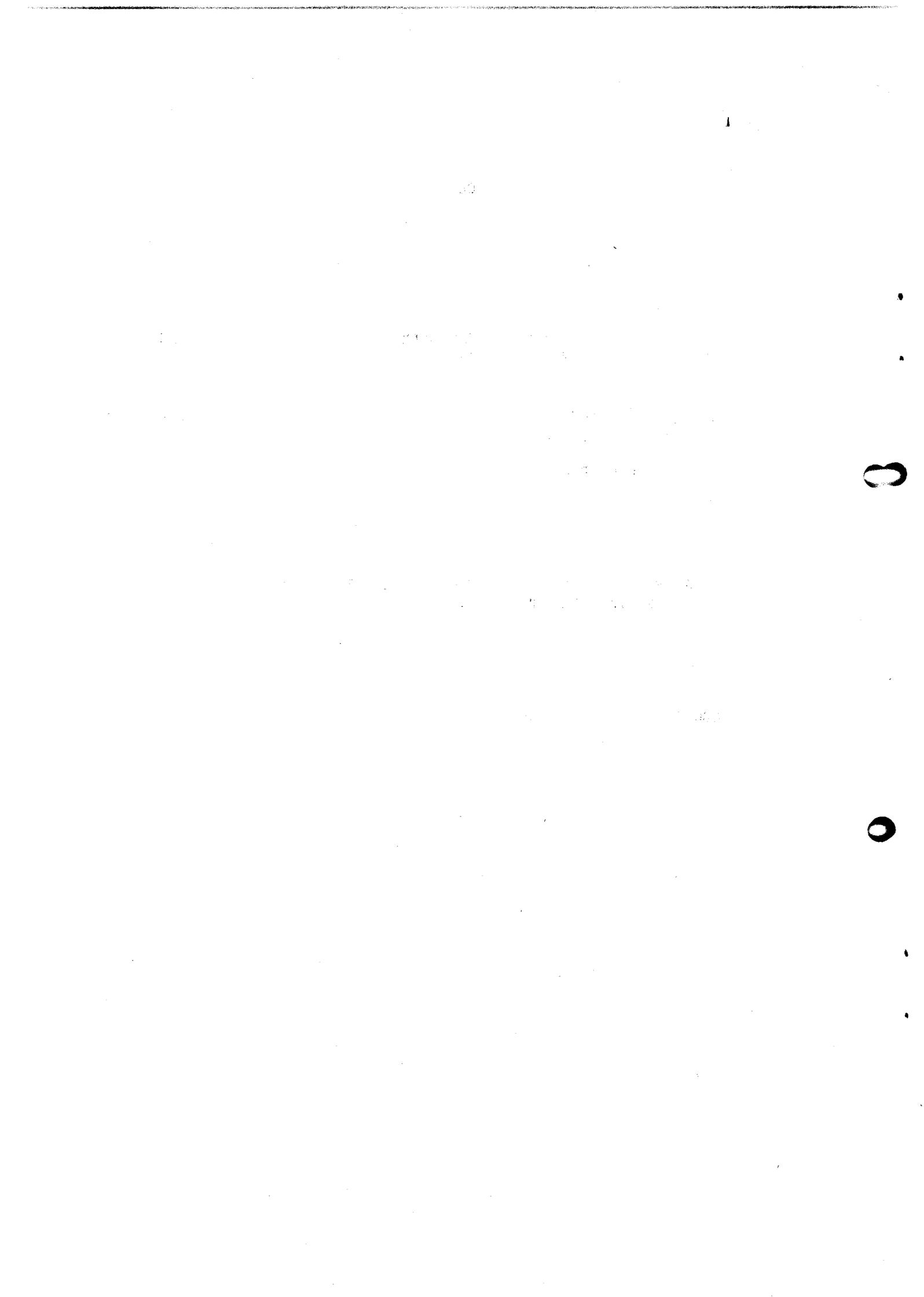
IUREP

NATIONAL FAVORABILITY STUDY

HONDURAS

Contents

	Page
1. INTRODUCTION	1
2. GEOLOGY IN RELATION TO POTENTIALLY FAVORABLE URANIUM-BEARING AREAS	1
3. PAST EXPLORATION	2
4. URANIUM OCCURRENCES AND RESOURCES	2
5. PRESENT STATUS OF EXPLORATION	3
6. AREAS FAVORABLE FOR URANIUM MINERALIZATION AND POTENTIAL FOR NEW DISCOVERY	3
7. BIBLIOGRAPHY	3
GEOLOGIC MAP OF HONDURAS	5



1. INTRODUCTION

(a) Geography

Honduras is a very mountainous, well-forested area of 112,088 square kilometers. The capitol is Tegucigalpa. Between the Volcanic Highlands in the south and the Central American Cordillera in the north lies a series of valleys and plateaus. Tropical lowlands occupy the Caribbean and Pacific coasts. The country is largely higher than 762 meters above sea level, with a maximum of 2,865 meters.

(b) Climate

High temperatures prevail, especially in the coastal areas. Rainfall is generally heavy except on the central highlands. The wet season extends from mid-April to October.

(c) Access

The country has 4,940 km. of roadway, mostly unpaved, some of which is unpassable in the rainy season. The principal highways are the Inter-American (243 km.) and the Inter-Ocean (341 km.). The 1,074 km. of railroad track is concentrated along the northwestern Caribbean Coast. Air transportation is vital to Honduras because of the terrain, and there are about 100 airfields, with two near Tegucigalpa (Toncontin airport) and San Pedro Sula providing international service. There are many large rivers in the country but these generally are navigable only for short distances.

2. GEOLOGY IN RELATION TO POTENTIALLY FAVORABLE URANIUM-BEARING AREAS

Honduras is divided into three major physiographic provinces: the Northern, Central, and Southern Cordillera; the Mosquitia Embayment; and the volcanic plateau in the south.

The volcanics in the south of Honduras overlap the Cordillera which lie to the north. The volcanics are divided into two groups. The lower most group consists of Eocene to Early Miocene extrusives of the Matagalpa Group which is made up of basic to intermediate lavas and pyroclastics as well as minor acidic pyroclastics and volcanic sediments. The other group, which overlies the Matagalpa, is known as the Padre Miguel Group. This consists of Oligocene (?) to Pliocene acidic pyroclastics and interbedded waterlain tuffs as well as locally distributed shales and sandstones. There are also several Quaternary volcanic craters scattered throughout the country.

Underlying the volcanics in the Central and Southern Cordillera is a sequence of continental sediments, the Valle de Angeles Group,

believed to be Upper Cretaceous to Miocene in age. These rocks are largely siltstones, sandstones, and conglomerates. Minor limestones make up the base of the section. All are believed to have been laid down in a shallow marine environment. Below this section lies a thick sequence of Cretaceous limestones collectively known as the Yojoa Group and below the limestones is a 610m thick section of continental Jurassic redbeds known as the Todos Santos Formation. Underlying these in eastern Honduras is the El Plan Formation which is composed of folded and faulted Triassic and Jurassic dark shales and sandstones of shallow marine and flood plain origin.

Most of the southern third of the country is covered by Tertiary to Recent extrusives which form the floors of many of the valleys almost to the north coast. The extrusives in the central part of the country are predominantly tuffs for the most part unbedded and unsorted. Flows are interbedded with tuffs in the southern part of the country. Both tuffs and flows range in composition from rhyolitic to andesitic.

Paleozoic metamorphic rocks outcrop beneath the Mesozoic section in the northern and central parts of the country. These are largely phyllites, metasediments, and some metavolcanics. The grade of metamorphic rocks is highest in the north. Mica schists, garnet schists, graphitic schists, amphibolites, quartzites and marbles have been reported. Little work has been done in the metamorphic terrain.

The oldest known intrusives in Honduras are gray Permian (?) granites which have been emplaced in schists in Olancho and Santa Barbara. Elsewhere there are numerous scattered stocks, dikes, and sills consisting of andesite and dacite porphyry and diorite.

3. PAST EXPLORATION

In 1953, the U.S. Atomic Energy Commission, on invitation of the government of Honduras, conducted uranium reconnaissance in parts of the country. The survey consisted of scintillometric examination of all formations, veins, dikes, sills and contacts along more than 1,500 km of road. Additionally, 17 mines and prospects were examined, but in no location were uranium occurrences found. The largest and most consistently radioactive deposit noted was a body of volcanic ash at Santa Rosa de Copan, a sample of which assayed 15 ppm. U_3O_8 .

4. URANIUM OCCURRENCES AND RESOURCES

A uranium prospect has been described from the Yamala area in northwest Honduras. Uraninite and oxidation products occur in

association with copper and mercury minerals in veinlets as well as disseminations in a Lower Cretaceous limestone conglomerate, the Ilama Formation. The Ilama Formation is the conglomeratic facies of the Atima (limestone) Formation, both of which are in the Yojoa Group.

At the time of the U. N. development program survey in May, 1970, no uranium deposits were known in Honduras.

5. PRESENT STATUS OF EXPLORATION

Information is not available on current exploration in Honduras.

The state owns most mineral deposits but may grant rights for exploration and exploitation of the subsoil. Mineral and surface titles are separate. Deposits of uranium and its salts, thorium and similar atomic energy substances are reserved to the state. Foreign citizens and companies, with some exceptions, may acquire mineral rights.

6. AREAS FAVORABLE FOR URANIUM MINERALIZATION AND POTENTIAL FOR NEW DISCOVERY

Several groups of sediments might be of interest for uranium exploration. The Todos Santos redbeds and the El Plan Formation are both shallow marine and hence may contain marginal marine facies favorable for uranium. In the southern and central Cordillera, the Valle de Angeles sediments, particularly the sandstones, may be of interest. The contacts between Permian (?) granites and schists (Paleozoic ?) may also warrant attention.

Lacking further information on which to base a more optimistic outlook, it is estimated that the uranium potential of Honduras may be on the order of 1,000 to 10,000 tonnes.

7. BIBLIOGRAPHY

Foran, J. F. and Reinhardt, E. V., 1953, A Reconnaissance of Uranium Possibilities in Parts of Honduras: USAEC, RME-17, 19 p.

IGN (Instituto Geográfico Nacional), 1974, Mapa Geológico de la Republica de Honduras, Escala 1:500,000, Tegucigalpa.

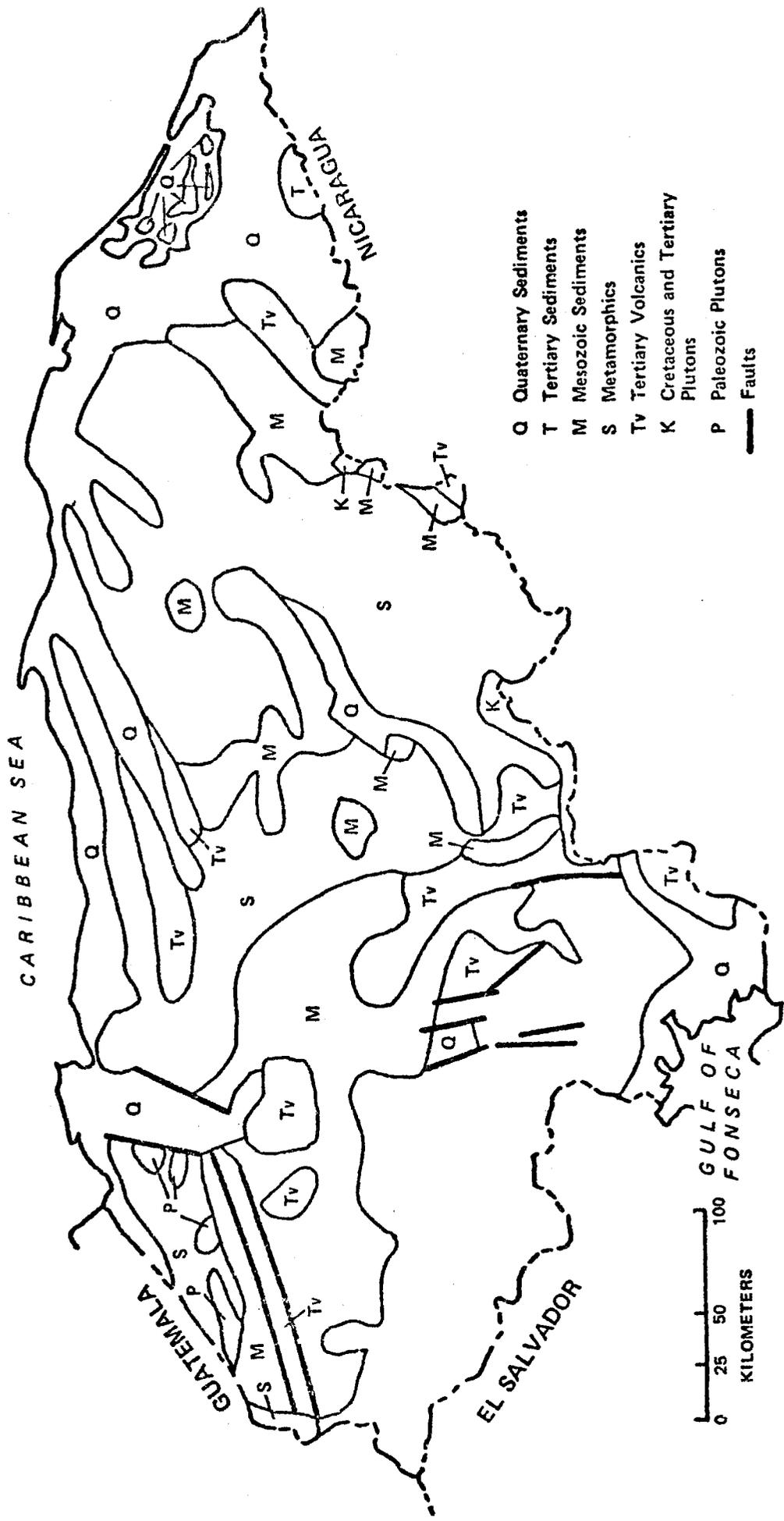
Mills, R. A., Hugh, K. E., Feray, D. E. and Swoles, H. C., 1967, Mesozoic Stratigraphy of Honduras, Am. Assoc. of Petroleum Geologists, Bull., vol. 51, pp. 1711-1786.

Svanholm, John, 1973, Uranium Discovery in Yamala, Honduras: Publicaciones Geológicas del ICAITI, no. 4, p. 37-39.

Williams, Howell and McBirney, A. R., 1969, Volcanic History of Honduras: Berkeley and Los Angeles: University of California Publications in Geological Sciences, vol. 85, 101 p.

Compiled by USERDA
August 1977

GEOLOGIC MAP OF HONDURAS



- Q Quaternary Sediments
- T Tertiary Sediments
- M Mesozoic Sediments
- S Metamorphics
- Tv Tertiary Volcanics
- K Cretaceous and Tertiary Plutons
- P Paleozoic Plutons
- Faults