DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-380

EXPLANATION

	PREDOMINANTLY SEDIMENTARY ROCKS				PREDOMINANTLY VOLCANIC ROCKS
	AFRICA, MADAGASCAR, AND ARABIA	IRAN, PAKISTAN, INDIA, AND BURMA	MALAY PENINSULA AND INDONESIA	AUSTRALIA AND TASMANIA	ALL AREAS
CENOZOIC	Quaternary, undifferentiated, and Tertiary, continental. In Mozambique, may include some Tertiary rocks.	Quaternary: Pleistocene and Recent. Includes alluvium of major rivers and their deltas. In Iran, may include some Tertiary continental sedimentary rocks.	Quaternary	Quaternary and Tertiary. (Cs, predominantly Quaternary. T, Tertiary, continental except possibly some marine beds near coasts.)	Predominantly volcanic rocks of various ages. In West Pakistan, Tertiary and Recent volcanic rocks. In Indonesia, Tertiary to Recent, except in S. Sumatra includes some Paleozoic metamorphic rocks, and in islands east of Java includes some Tertiary sedimentary rocks. In Africa, Madagascar, and Arabia, younger than Precambrian.
	Tertiary, marine.	Tertiary, predominantly marine, except in N. India where the predominantly continental Siwalik formation of Miocene to Pleistocene age is included. In Iran and West Pakistan, includes some sedimentary rocks of Mesozoic age.	Tertiary, except in Soemba where earlier intrusive and volcanic rocks and some Mesozoic sedimentary rocks are included. On Christmas Island includes volcanic rocks.	(Symbol not used)	Late Cretaceous to early Eocene basalt; the Deccan trap series.
	(Symbol not used)	In W. Burma, Tertiary and Cretaceous rocks, some Cretaceous serpentine. In NE. Burma, areas of unknown geology.	Areas of undetermined stratigraphy in Timor, Soembawn, and Soemba.	(Symbol not used)	Jurassic basalt.
MESOZOIC	Cretaceous and Jurassic, continental.	(Symbol not used)	(Symbol not used)	(Symbol not used)	IGNEOUS AND METAMORPHIC ROCKS ALL AREAS
	Cretaceous, Jurassic, and Triassic, marine.	Cretaceous and Jurassic, chiefly marine. In West Pakistan, includes undifferentiated sedimentary rocks probably of Mesozoic and possibly in part of Cenozoic age. In W. India, marine Jurassic. In SE. peninsular India, marine Cretaceous. In Burma, predominantly marine Cretaceous.	In Malay Peninsula, Jurassic and Triassic. In Timor, includes some Permian.	Mesozoic, locally with small areas of Cenozoic rocks indicated by symbols Cs and T, with meanings as above.	Precambrian basement complex. Also includes igneous rocks of unknown age in the Seychelles and Prince Edward Islands, on the west tip of Socotra Island, and on The Brothers Islands southwest of Socotra; granites of Mesozoic age in Malay Peninsula; schists of Paleozoic and Mesozoic age and igneous and metamorphic rocks of unknown age in Timor; volcanic and intrusive igneous rocks of post-Precambrian age in Australia and Tasmania.
PALEOZOIC	Carboniferous to Triassic, and in Madagascar some Lower Jurassic; predominantly continental, but volcanic rocks in upper part in South Africa: the Karroo series.	Upper Carboniferous to Lower Cretaceous, predominantly continental: the Gondwana series. In India, includes Upper Gondwana rocks of Mesozoic age.	(Symbol not used)	(Symbol not used)	
	Lower and middle Paleozoic.	Paleozoic undifferentiated. In India, includes upper Precambrian sedimentary rocks.	Paleozoic undifferentiated.	Paleozoic, locally with small areas of predominantly Quaternary rocks, indicated by symbol Cs.	

This map has been prepared as a contribution to the International Indian Ocean Expedition and the Second United Nations Economic Commission for Asia and the Far East Symposium on the Development of Petroleum Resources of Asia and the Far East. Geologic information shown has been generalized primarily from the following published maps; in some places it is not the most recent known.

Equisse Structurale Provisoire de L'Afrique: Association des Services Geologiques Africains, 1958. Scale 1:10,000,000.

Geologic Map of Asia and the Far East: United Nations Economic Commission for Asia and the Far East, 1959 [1961]. Scale 1:5,000,000.

Provincia de Moçambique, Esboço Tectonico: Servicos De Indústria E Geologia, 1956. Scale 1:3,000,000.

Tectonic Map of Australia: Australia Bureau of Mineral Resources, Geology and Geophysics, 1960. [Compiled by the Tectonic Map Committee, Geological Society of Australia, in association with others.] Scale 1:2,534,400.

Faults are shown by heavy black lines in Africa, Arabia, and Australia. Faults are known to be present in other areas but are not shown on the published maps listed above.

MERCATOR PROJECTION
SCALE 1:13,655,000 AT LATITUDE 15°

CHANGE OF SCALE WITH LATITUDE

1:8,000,000 1:10,000,000 1:13,000,000 1:19,000,000

BATHYMETRIC CONTOURS FROM U.S. NAVY (IN FATHOMS)
HYDROGRAPHIC OFFICE CHART NO 15,254

FATHOMS: 100, 1000, 2000, 2500, 3000
FEET: 600, 6000, 12,000, 15,000, 18,000

Base from U.S. Navy Hydrographic Office Chart No. 3875
Political boundaries are approximate and should not be regarded as having official significance.

GRAPHIC SCALE OF STATUTE MILES

GRAPHIC SCALE OF KILOMETERS

THE INDIAN OCEAN

THE GEOLOGY OF ITS BORDERING LANDS AND THE CONFIGURATION OF ITS FLOOR

1963

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—42408

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For sale by U.S. Geological Survey, price 1.25