

to obtain geothermal energy. Only one of them has been developed, five more are being studied, and general inventory and sampling are being done throughout the country.

The probable potential in the geothermal zone of Cerro Prieto, Baja California, has been determined and a general estimate of the known geothermal zones and the total potential have been completed.

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#### LAND SUBSIDENCE IN JAPAN RESULTING FROM FLUID EXTRACTION

The land-subsidence areas in Japan are in and around big cities, industrial zones, and paddy-field zones on the coastal lowlands where groundwater has been utilized extensively and excessively. In view of the enormous sums of money spent for various counter-measures in the land-subsidence areas, groundwater hardly can be said to be a cheap resource.

From the viewpoint of an unsuccessful example of groundwater-resource development, the characteristics and the future problems of land-subsidence in Japan are summarized briefly.

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#### PRINCIPAL CHARACTERISTICS OF PORPHYRY COPPER DEPOSITS IN STATE OF SONORA, MEXICO

The State of Sonora, where several porphyry copper deposits are located, is south of Arizona and New Mexico, USA. Sonora and the copper province of the southwestern USA have similar physiography in part, mineralized areas, and geologic conditions, which have been traced southward parallel with the Mexican Pacific Coast.

This paper is a summary of the regional geology of the area as well as of geologic characteristics of the mineralization and alteration of the main deposits such as Cananea, Pílares de Naco, and La Caridad.

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#### LATIN AMERICA'S OUTLOOK TOWARD ENERGY RESOURCES

Latin America countries are alike in many ways, but they differ widely in respect to present and future problems in energy and mineral resources. Rapidly rising demands for energy already have created serious trade-balance problems for some countries. As development rate accelerates, Latin America will be consuming an ever increasing share of its own mineral resources most of which are now exported. As a region, Latin America is rich in energy and mineral resources. For a group bound by history, culture, and language, a logical approach for the future is to make a joint study of the situation, and to propose a unified formulation of a regional development plan which will make most effective use of each country's potential for the mutual benefit of all the Latin American countries.

BASKOV, E. A.

#### REGULARITIES OBSERVED IN REGIME OF WATER OF CIRCUM-PACIFIC AREA

No abstract available.

BERG, H. C., A. L. CLARK

#### METALLIFEROUS PROVINCES OF ALASKA

No abstract available.

BERGER, V. I.

#### EVOLUTIONARY SERIES OF ANTIMONY DEPOSITS OF EASTERN USSR

No abstract available.

BEZRUKOV, P. L., A. S. MONIN

#### MANGANESE NODULES OF PACIFIC

No abstract available.

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#### SALINE GROUNDWATER INFLOWS TO RIVER MURRAY IN SOUTH AUSTRALIA

The River Murray flows for 650 km of its total length of 2,600 km through South Australia, where it meanders in an incised channel across a floodplain 1 to 10 km wide, and is underlain by 500 m of predominantly Tertiary bryozoal limestone and sand of the Murray basin. Natural groundwater in the basin commonly has a salinity of 30,000 mg/l.

Groundwater gradients are relatively flat (0.25 m/km) and flow is generally toward the river and reflects the recharge from the higher country of the basin margins, about 250,000 sq km in area. The Tertiary sediments form aquifers of moderate transmissivity (200 to 500 cu m/day/m). Some inflows of saline groundwater are present naturally through the river bed but most inflows are the result of man-made structures and practices.

The waters of the River Murray are vitally important to South Australia for domestic supplies and for irrigation of citrus orchards along the river banks. This irrigation has resulted in the buildup of groundwater mounds which are relieved by a tile drainage system. Drainage water, now of increased salinity, is pumped to evaporation basins on the floodplain close to the river. The raised water levels in these basins and also in the river weir system have increased inflows of saline groundwater to the river. In drought years these salt accessions can make the water unsuitable for irrigation.

Piezometers have been established to monitor the regional groundwater regime, the irrigation groundwater mounds, and the effect of raised water levels in storage basins. The mechanisms of leakage from these basins have been studied to determine remedial measures necessary to intercept and remove saline-groundwater underflow. Alternative evaporation basins sited