made up of a thick series of Jurassic terrestrial sedimentary and andesitic rocks. A few small Tertiary basins are scattered in the eastern coastal area and in Cheju Island, and are composed of marine sedimentary and basaltic rocks.

Jurassic Daebo granites intrude the Kyonggi-Ryongnam massif and the Okcheon zone in the Sinian direction, whereas Late Cretaceous Bulkuksa granites are scattered randomly in the Kyongsang basin.

Most of the mineral deposits are related to the acidic intrusives and are classified chiefly as hypothermal to mesothermal vein and metasomatic replacement deposits, depending on the predominance of structural or lithologic control. In Precambrian terranes gold-silver, lead-zinc, tungsten, molybdenum, and fluorite are present as vein deposits, and tungsten and iron deposits as metasomatic replacements, except for the Precambrian iron formation, graphite, and talc.

In the Paleozoic terranes, gold-silver, lead-zinc, tungsten, and iron deposits are metasomatic-replacement type although some gold-silver deposits may be vein type. In the Mesozoic terranes, iron, copper and lead-zinc veins are common in the andesitic rocks and cherty slate, whereas pyrophyllite deposits are in acidic tuffs as a result of post-igneous activities.

These mineralized areas, except the Kyongsang basin, are grouped into belts trending subparallel with the Sinian direction and generally show a rough zoning defined by the general gradient of genetic temperatures. The metallogenic epochs of these deposits are classified into four stages: Precambrian, Paleozoic, Jurassic to Early Cretaceous, and Late Cretaceous to early Tertiary.

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STRATIFORM AND STRATABOUND METAL CONCENTRATIONS IN AUSTRALIA

Australia is well endowed with stratiform and stratabound metal deposits, mainly sulfides. The known deposits of this type include concentrations of lead-zinc-silver, copper, copper-gold, copper-zinc-lead, tin, nickel, tungsten, gold, uranium, iron ore, and one of manganese. The last excepted, these are all Precambrian or Paleozoic in age.

Some of the names have become known to the world: Mount Morgan, Mount Lyell, Broken Hill, Mount Isa. Some of them cropped out prominently and were found 90 to 100 years ago. Some less obvious deposits have been found only in recent years after the area had been mined for the same or other metals for many decades.

As elsewhere in the world, these stratiform concentrations include some metal deposits of first magnitude, containing from millions up to tens of millions of tons of metal in high-grade deposits. The oldest deposits are still in full production today and some have contributed greatly to the development of the industry and the economy.

The search for new deposits of this type in Broken Hill led, 20 years ago, to the development of new concepts of origin and occurrence of these stratiform (as distinct from the classical vein-type) deposits. They now are regarded as normal if unusual products of the geologic history of their environments and as exhibiting world wide patterns of occurrence which are relevant to the potential of rocks of certain types and ages.

These concepts and patterns have provided new stimulus for study of the paleogeographic, chemical, and biologic conditions of these geologically ancient times.

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STRUCTURAL FORMATIONAL ANALYSIS OF NORTHWEST PACIFIC REGION

No abstract available.

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TECTONIC FRAMEWORK OF PETROLIFEROUS ROCKS IN ALASKA

Alaska, comprising 3.6 x 10^6 sq km (about 28%) of the land, shelf, and upper continental slope of the United States, has been estimated by the U.S. Geological Survey to contain about 20% of total petroleum liquids and natural gas resources of the nation. Some 15 billion bbl of petroleum liquids and about 31 trillion cu ft of natural gas have been discovered.

In northern Alaska, Paleozoic and Mesozoic shelf and slope deposits and some ophiolitic rocks of the Brooks Range orogen were thrust northward over the depressed south margin of the Paleozoic and Mesozoic Barrow platform, on which a foredeep (the Colville geosyncline) developed in Early Cretaceous time. Cretaceous and Tertiary sediments from the Brooks Range filled this foredeep and prograded northwest and northeast to form the Chukchi and Colville delta systems and to fill the Camden coastal basin.

A series of arc-trench systems developed on oceanic rocks in southern Alaska during the Jurassic and Cretaceous. These arcs were subparallel with the Mesozoic continental margin of southern Alaska. Between the arcs and the metamorphic (continental) terranes of east-central Alaska and the southern Brooks Range, a large marginal ocean basin received thick Jurassic and Cretaceous volcanic and detrital deposits. These deposits were extensively deformed and disrupted by widespread mid-Jurassic to Tertiary plutonism, Late Cretaceous and early Tertiary ("Laramide") oroclinal bending, wrench faulting, and arc-related compression.

The Laramide events "continentalized" the late Mesozoic marginal basin deposits and welded them to the older continental terranes. Subsequent sedimentation was more localized and nonmarine, except in basins along the Pacific, Arctic, and Bering coasts where thick mixed marine and nonmarine sections are present. The active Aleutian arc and associated Queen Charlotte transform-fault system were superimposed obliquely across the southern continental margin of Alaska in early Cenozoic time and have since dominated structural and depositional patterns in southern Alaska.

The largest petroleum reserves in Alaska and the best prospects for additional large discoveries are in northern Alaska, where an extensive terrane is underlain by upper Paleozoic to Tertiary shelf and slope clastic and carbonate deposits. The pre-Tertiary arc and marginal-sea deposits in southern and interior Alaska are either too intensely deformed or too low in porosity to offer more than modest local prospects. The Tertiary coastal onshore and offshore basins with