

were offered for \$1.25 per acre without reservation of their minerals, although school sections were supposed to be nonmineral. Reservation of minerals by the government began nominally with a provision in the Homestead Act of 1862 that mineral lands were not liable to entry and settlement. In the same year Congress provided that railroad land grants were to be for nonmineral lands, with the exception of coal and iron ore lands. Preliminary mining legislation dates from 1866 (30 U.S.C., sec. 21).

The mining law, as passed May 10, 1872, was clearly written around metalliferous lode and placer deposits. Thereafter, Congress from time to time authorized the acquisition of some nonmetallic minerals including petroleum and salines under the placer provision of the mining law of 1872. However, coal was always an exception, beginning with the act of March 3, 1873, which concerned the sale of coal land.

In 1905 and 1906 it was disclosed that many large areas of coal land in the public domain had been obtained fraudulently through agricultural entries rather than by purchase as coal lands. Thereupon, President Theodore Roosevelt directed the Secretary of the Interior to withdraw all remaining coal lands from entry. The Geological Survey identified these lands, and they remained withdrawn under executive order until withdrawal legislation was forthcoming in 1910. At that time Congress also provided for agricultural patents to coal lands, but with reservation of the coal to the United States.

In 1908 President Roosevelt held a governors' conference on conservation during which several speakers called attention to the importance of phosphate fertilizer for depleted soils, noted the export of Florida phosphate to Europe, and suggested withdrawal and reservation of our western phosphate fields. The Geological Survey had identified most of the lands, and the withdrawal was done promptly. Oil and gas structures in conflict with agricultural entries were begun to be withdrawn at about the same time, and in 1913, potash and associated saline lands were also withdrawn in aid of legislation and for classification. A 1914 act opened the withdrawn or classified lands to agricultural entry subject to reservation of these fuel and fertilizer minerals. The first leasing act came in 1917 (potash) and the General Mineral Leasing Act was passed in 1920. These acts and their later amendments repealed the mining law of 1872 as to the named leasable minerals and lands valuable for them.

LEASABLE MINERALS NAMED

The leasable minerals in public domain lands named in the various mineral leasing acts as amended over the years are coal, oil, gas, and oil shale; phosphates, or phosphate rock; chlorides, sulfates, carbonates, borates, silicates or nitrates of potassium and of sodium; sulphur in Louisiana and New Mexico; and native asphalt, solid and semisolid bitumen, and bituminous rock (including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined or quarried).

The foregoing tabulation, taken directly from codified law, is not stated in mineralogical textbook language. We must go behind the law to the legislative history and the Department's constructions to understand the meaning of some of the terms.

MANY REASONS LED TO ENACTMENT

Three major leasing bills for fuels and fertilizer minerals were introduced in the Congress before potash was separated in 1917 for immediate enactment. All provided terms and conditions which would prevent the establishment of monopolies, insure competition, provide for continuous working of deposits under lease, discourage the holding of lands for speculative purposes, protect the prospector's investments made prior to actual discovery of a valuable deposit, insure enough acreage and mineral resources to justify plant investment, and provide for proper operation and prevention of waste. Of these, the legislative history shows that the major reasons leading to enactment of the mineral leasing laws involved the desire to prevent development of monopolies, to discourage holding without development for speculative purposes, and to provide for continuous working of the deposits. An instructive statement along these lines, concerning western phosphate, appears in House Committee Report No. 688,