

## Chapter 18

### **Forest and Mineral Lands Developments**

Most of the treatises and discussions of land acquisition and landownership in the United States have neglected the importance of forests and minerals as products of the land. These natural resources, like agrarian and urban areas, have largely come into the hands of private owners, and their use and destruction have not generally inured to the benefit of the people as a whole. Moreover, the problem of monopolization is here also important. Timber and mineral resources are from their very nature exploited under different conditions than are arable lands, and this affects the character of their ownership. Small operations are limited and, in most cases, economically impractical. Large-scale operations, on the other hand, require large areas of unified ownership, and this intensifies the trends toward monopoly. These facts make the history, policies, and trends in the use and in the development of forest and mineral resources of the nation of especial significance.

#### **The Forests and Their Exploitation**

Forests have been a most important natural resource of the United States. They have served to furnish an ample timber supply, have built up by-product industries, and have been a contributing factor in the conservation of soil, water, and power resources. The United States had originally within its advancing territory a forest area larger than any other nation. But as settlements advanced and as population increased, primeval forests had to be cleared for agricultural use. This necessitated the elimination or alteration of much forest area. Forest lands, which

at one time covered more than one half of the nation's territory, have now dwindled to less than one fourth, and only a limited portion of this is available for exploitation. Moreover, despite recent efforts of the federal government, the states, and private interests toward timber conservation and timber culture, forest destruction proceeds faster than population increases, and the consumption of native timber is estimated to be greater than the natural growth.

Before the disappearance of the frontier of settlement, American forests were destroyed mainly to provide agricultural lands. Yet even in early colonial days, lumbering was an important industry. The British relied on it largely for a supply of masts. It was the basis of the colonial shipbuilding industry. The forests of New England were prized also as a source of maple sugar and for pearl- and potashes.

Though timbering then was a local industry, limited to a few forested areas adjacent to rivers that could float the logs, it has in more recent times developed into an industry on a national scale. With improved transportation facilities, markets for timber products expanded and amplified, and large-scale output has replaced much of the output of local sawmills. All this has led to concentration of forest ownership by large corporations. In 1910, the United States Bureau of Corporations reported that at that time one half of the privately owned timber resources in the country were held by about 250 owners; and of these, several, notably the Weyerhaeuser corporation and a few others of whom we shall speak later, controlled the bulk of it.

Concentration of ownership has since continued. Notwithstanding large timber areas held in national forests, it is estimated that four fifths of the timber-growing land in the United States, exclusive of Alaska, is still privately owned, even though large areas have been acquired by the federal and state governments as forest reserves and recreation areas.

Under private exploitation, the timber resources of the nation have been recklessly wasted. Areas which in the early days of the Republic were the leading timber and pulp producers, such as New England, Pennsylvania, and New York, have been largely denuded, and the production of timber moved, first to the region of the upper Great

Lakes, and then to the Pacific Northwest, though some timbering areas in the South still persist. In this shifting process, the opportunity was afforded for the engrossment of forest lands by large corporations and wealthy individuals. It has already been shown that the opportunity arose in many instances through the acquisition and engrossment of timber areas lying within the limits of railroad land grants. Contiguous areas were readily added, and, in this way, the nation has been threatened with the private monopolization of its timber resources. This has led to efforts to obtain a greater knowledge of the pattern and extent of ownership of forest lands, along with demands for conservation and protection of the future national forest and timber resources.

But, in spite of these movements, it should be borne in mind that, regardless of public pressure for conservation, it is the private owners of timber land who have it in their hands to determine whether a desired program can be put into effect. The object of private ownership is pecuniary gain, and this in many cases may induce owners of forest lands to denude and market their timber resources as rapidly as possible. In this way they escape taxes, interest, and guardianship charges that would be borne by them if they extended their operations over a long period of time. By mass-production methods to lower operating costs, the land is denuded of its entire merchantable timber, and the nation is deprived of a necessary and important natural resource for its future welfare and even for its existence.<sup>1</sup>

### Government Timber-Land Disposal

In the early years of disposal of the public domain, no distinction was made between timber lands and agricultural lands. In the Northwest Territory as well as in the region south of the Ohio River, the land was mostly in a natural primeval forest condition, so there was little need for this distinction. In the Great Plains states, however, there was little in the way of forests, and in order to encourage tree planting, Congress in 1873 passed what is called the Timber Culture Act. Under its

<sup>1</sup>See Report on Senate Resolution 311, 66th Congress, 2nd Session, 1920, known as the "Capper Report on Timber Depletion . . . and Concentration of Timber Ownership." See also *Report on Forest Land Resources*, National Resources Board, Washington, D.C., 1935.

provisions, land was given without charge if the donees agreed to plant trees. No greater opportunity was ever given to fraudulent entries of the public land. Repeated recommendations were made by the head of the General Land Office that the act be repealed, as frauds were beyond the reach of correction. The act was finally repealed in 1891.

Congress also passed in 1878 the Timber Land Act, but limited its provisions to the states of California, Oregon, Nevada, and Washington Territory. Under the act it was stipulated that public land valuable chiefly for timber but unfit for cultivation could be opened to private entry. Single entries by individuals and associations were limited to 160 acres, and the condition was set down that the entry should not be made for speculation, nor for the benefit of any other person than the party making the entry. The applicant was required to swear, among other things, that he had made no contract or agreement by which the title he might receive from the United States would inure in whole or in part to the benefit of any person but himself. These provisions were undoubtedly wise, but they were, as the land commissioner stated in 1883, "widely evaded," adding, "It is understood that large operators cause their employees and other persons to make the necessary affidavit, enter the lands, and then convey to their employers or principals. In this manner large tracts of timber lands in California, Nevada, Oregon and Washington Territory are controlled by single persons and firms, contrary to the intendment of the statute."<sup>2</sup>

The commissioner noted further that "the rapid decrease in the timber areas of the country invites attention to the methods of appropriation of public timber lands"<sup>3</sup> and suggested a modification of the law. He advised that timber lands be reserved by law from ordinary disposal and sold only after appraisalment under sealed bids, and at not less than the appraised price.

Probably the worst frauds in the disposition of the public domain were committed under the Timber Land Act. An instance of this is

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<sup>2</sup>Thomas Donaldson, *The Public Domain, Its History, with Statistics*, House Misc. Doc., 47th Cong., 2nd Sess., no. 45, part 1, p. 306.

<sup>3</sup>*Ibid.*, p. 1166.

cited by Marion Clawson. "Along the Pacific Coast," he says, "where much of the lumber was shipped by boat, it was the common practice to round up a group of alien sailors off a ship, have them fill out first papers toward citizenship, and then file on a tract of timber land which was available at a nominal price. This would be sold to a timber company and the timber cut, without citizenship going any further."<sup>4</sup> Other frauds were connected with the unauthorized cutting of timber on government land. In order to correct these abuses, Carl Schurz, when Secretary of the Interior, recommended that timber land not be sold but that timber operations be permitted on federal land under federal supervision and sold to operators instead of being given away. But no legislation dealing with forest-land administration was enacted until 1891, when the national forest system was established. The Timber and Stone Acts were then repealed.

However, under the timber acts, approximately 35,000,000 acres of land were lost to the people, most of which entered into the maws of large private concerns.

### The Weyerhaeuser Timber-Land Holdings

The largest concentration of timber-land ownership today is that of the Weyerhaeuser Timber Company. This concern owes its origin largely to the activities of Frederick Weyerhaeuser, a German immigrant who, after several local ventures in lumbering around Rock Island, Illinois, moved to St. Paul, Minnesota, where he became acquainted with James J. Hill, the railroad magnate, whose company, the Northern Pacific Railway, held large tracts of timber land. Hill was anxious to dispose of the remaining landholdings of his railway empire. In 1899, the land commissioner of the Northern Pacific Railway took Frederick Weyerhaeuser to South Bend, Washington, on a timber-inspection trip. The result of this journey was a purchase on January 3, 1900, by Weyerhaeuser and his associates of 900,000 acres of Northern Pacific timber lands at a price of \$6.00 per acre. Thus the Weyerhaeuser Timber Company was organized. By subsequent additional acquisitions of timber lands in the Pacific Northwest, this company has become

<sup>4</sup>*Op. cit.*, p. 85.

the largest private owner of timber resources in the United States, if not in the world. Its present holdings, mostly in the states of Washington and Oregon, are in excess of 3,000,000 acres.<sup>5</sup> The company gradually developed a broad policy of timber exploitation and preservation, with the object of conducting a permanent and expanding production. This is the reversal of the policy of many other timbering concerns, whose object has been to cut the merchantable timber as rapidly and completely as possible under the circumstances, in order to reap quick and large profits. The Weyerhaeuser Company has co-operated with state and federal authorities in measures to preserve the supply of timber in the territory in which it operates.

Another large aggregation of timber-land holdings, held under much the same policy as the Weyerhaeuser concern and also located in the Pacific Northwest, is that held by the Crown-Zellerbach Corporation.

### Why the Public Should Own Forest Land

In no field of land economics is it more apparent that the interest of all the people is best served by public ownership than in the case of forest land. The history of private exploitation of the nation's forests makes this obvious. The grounds for this conclusion are nowhere better expressed than in the introductory paragraphs of a monograph prepared for Congress in 1933 by S. B. Show, then federal forester of the California region, entitled "The Probable Future Distribution of Forest Land Ownership."<sup>6</sup> These are his words:

Stability of ownership of forest lands is a prerequisite to the stability of forestry. The bulk of the commercial forest lands are now in private ownership, but significant changes in ownership are taking place with great rapidity, and on a Nation-wide scale. Extensive tax delinquency in the cut-over regions; failure of any considerable number of owners to take advantage of the special forest tax laws enacted by many States specifically to help the

<sup>5</sup>For details on the concentration of timber holdings in 1912, particularly the Weyerhaeuser holdings, see the Bureau of Corporations, *The Lumber Industry*, 4 parts, 1913-14.

<sup>6</sup>*A National Plan for American Forestry*, prepared by the Forest Service, U. S. Department of Agriculture, in response to Sen. Res. 175, Senate Documents, 73rd Cong., 1st Sess., no. 12, vol 2, 1253.

private owner remain in the forest-land business; the rapid exploitation of forests with scanty provision by the owners for continuing in the forest-growing business; and the very large areas of forest land offered at distress sale to public agencies—all are indicative of existing changes in forest-land ownership. These trends are even more significant as symptoms of widespread and imminent changes in the distribution of ownership.

Formerly forested land, now or recently used for farming, is being abandoned as unsuitable physically or economically for farming, and is thereby becoming available again for forest production. Major changes in the character of ownership of such land are obviously inevitable if it is to be managed for its highest value of forestry.

Other sections of this report bring new information to bear on the forest situation and the forest problems of the nation. To a very high degree, these finally focus on the question of ownership—whether existing ownership is accomplishing the full conservation of forest values so clearly needed, whether it is likely to, and whether a realignment of ownership should be deliberately sought, regardless of the trend toward breakdown of private ownership and the consequent shift toward public ownership. Other sections of this report in fact suggest or recommend increase in public ownership as a means of accomplishing such purposes as watershed protection, balancing the timber budget, and conservation of recreation and wildlife values:

Public acquisition programs by some of the States and by the Federal Government are already established, but with the exception of a few outstanding States such as New York, Pennsylvania, and Michigan, they are going ahead slowly. These public programs with few exceptions were based on what today appears to be an underestimate of the public values of forest lands, or on an overestimate of the stability of private ownership and management, and of the degree to which private ownership conserves them.

Clearly, a fresh appraisal of the probable distribution of forest land ownership is needed, one that takes account both of what is likely to happen anyway as a result of the breakdown in private ownership, and of what should be done in the direction of public ownership to meet the known needs of the forest situation. Such

an analysis, which this section of the report attempts, is beset by many difficulties. Major trends, involving hundreds of millions of acres of land, varying economic conditions, deeply planted habits of political thought and tradition, and complex interrelation and conflict between public and private needs and values, are not to be resolved into formulae accurate to the last decimal point. Estimates and approximations have necessarily been used in analyzing the problem, and great accuracy in the conclusions cannot be claimed. But even rather wide approximations, and the differing results obtained from various approaches to the problem, emphasize rather than obscure the conclusion that very large shifts from private to public ownership are both inevitable and necessary.

### The Disposition and Concentration of Mineral Lands

Mineral lands, as such, have been a prize acquisition in America, as in other countries. It is, of course, well known that the precious metals were eagerly sought after in the New World, and the English, French, and Dutch, along with the Spaniards, made it a strong if not a prime motive for conquest and exploration. But Spain appears to have been the only European nation which met with considerable success in this objective. Yet it should be noted that in the early English colonial charters the monarch reserved the right to a royalty on gold and silver that would be taken from the soil. This was the only claim to property by the King that was specifically mentioned in the original colonial charters.

Failure to find and exploit the precious metals was a blessing in disguise to the British colonists, since it forced them to devote their energies to agriculture, manufacture, and the utilization of other natural resources. The search for and the exploitation of the baser metals, however, were not neglected. Colonial mining for many years was confined largely to digging iron ore from bog deposits and the crude mining of iron, copper, and lead in isolated spots. Production was not large, however, and was applied mostly to domestic use. Since the colonists were prohibited by the British Navigation Laws from manufacturing metal products on a large scale, mining was largely a limited industry through-



out the colonial period, and no special importance was attached to mineral lands. Such lands, as a rule, were not distinguished from agricultural lands.<sup>7</sup>

In the early days of the disposition of the public domain, the same policy was largely followed, though in the Northwest Ordinance of 1785 mineral lands were specifically reserved from sale. Mineral lands then, however, were not distinguished from agricultural lands when there was no outward evidence of the presence of minerals. The fee-simple title gave the owner the right not only to the use of the soil but also to the growth on it and the minerals beneath it.

As early as April 16, 1800, Congress authorized the President to collect information relative to the copper mines on the south side of Lake Superior. This resolution contained a clause "to ascertain whether the Indian title to such lands as might be required for the use of the United States, in case they should deem it expedient to work the said mines, had been extinguished." Thus Congress at this period seems to have had in mind the direct working and control of mines in the United States.<sup>8</sup>

Likewise, Congress, on March 3, 1807, by Section 5 of an act for the sale of certain lands in Ohio and Indiana, "provided that lead mines in Indiana, with as many contiguous sections of land to each as the President might deem necessary, should be reserved" to the future use of the United States, and any grant of a tract of land thereafter "containing a lead mine" which had been discovered previous to the purchase of the tract should be fraudulent and void. The same act authorized the President, however, to lease the lead-bearing lands for a term not exceeding five years.

"This inaugurated the policy of the United States of leasing mineral lands," a policy not always put into practice and rarely adequately and

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<sup>7</sup>There were, however, a few projects to carry on the mining and processing of minerals on a large scale during the colonial period. Notably among these were the Principio Company in Maryland, of which George Washington's father was a promoter, and the Durham Furnace in Bucks County, Pennsylvania, which was at one time owned by George Taylor, a signer of the Declaration of Independence. Another was the Hopewell ironworks, also in Pennsylvania, the location of which is now preserved as a national monument. These undertakings continued in operation over more than a century.

<sup>8</sup>Thomas Donaldson, *op. cit.*, p. 306.

honorably administered.<sup>9</sup> As President Polk stated in his first annual message, on December 2, 1845:

The system of granting leases has proved to be not only unprofitable to the Government, but unsatisfactory to the citizens who have gone upon the lands, and if continued, must lay the foundation of much future difficulty between the Government and the lessees.

Following this advice, Congress, in 1846, provided for the sale of reserved lead mines in sections of the Northwest for cash. In the next year this was extended to include the iron-ore lands in the Lake Superior region.

Finally, in 1851, Congress authorized the classification of public land into "non-mineral" and "mineral." Pre-emptors and homesteaders were limited to the non-mineral lands, and mineral lands were withheld from railroads and other utilities that received land grants. The basis of the classification of land as "mineral" was evidence that the General Land Office had in its possession knowledge as to whether there were minerals in commercial quantities on the land. This basis, in view of inadequate staff and the limited extent of mineral exploration knowledge at the time, was defective. When lands that had been originally applied for were classified as non-mineral and later proved to be mineral in character, the patentee would still claim the mineral content. In this way, large areas of mineral land were obtained privately by prospectors and others, who in many cases had secret knowledge of the land's mineral content. This was but one of the defects in the "good-intentioned" land laws that afforded opportunities for fraud and corruption.

### Impact of the California Gold Discoveries

The California gold rush in 1849 rendered inoperative the mineral-land laws in that region. It was impossible for the federal government to enforce them, as the federal jurisdiction was not then completely established. Local law was enforced largely by the use of the rope. "General" John Sutter, on whose land gold had been discovered, was overwhelmed by squatters who conducted mining operations almost at

<sup>9</sup>*Ibid.*, p. 307

will. In view of this, the "general" appealed to Congress for compensation, but despite years of efforts by himself and his heirs, the bold California enterpriser, whose empire was destroyed by the "curse of gold," never received what he claimed was a just reward. The years he spent on the doorsteps of Congress cost him a vast sum, and he died poor in Washington on June 17, 1880.

The "gold rush" was ruled by local California law and custom, and it was not until 1866 that Congress, in recognition of the situation, passed an act providing that the public lands in the region be opened to exploration and occupation by citizens or those who declared their intention to become citizens (and this meant practically everybody), subject to local law and customs that were not in conflict with the national laws.

Finally, in 1872, another act was passed which, with minor modifications, has continued in effect down to the present time. Under this act a claimant was required to make "a valid discovery" of mineral "sufficient to justify a prudent man investing further of his time and money in its extraction." A claim was valid without patenting as long as the claimant did \$100 worth of "assessment work" on it annually. After \$500 worth of improvements had been made on a valid claim that had been surveyed, a patent to the land could be obtained by payment of \$5.00 per acre for lode claims and \$2.50 per acre for placer claims. Lode claims were limited to 600 by 1,500 feet, with the long axis parallel to the course of the lode. Under these arrangements, more than 1,000 patents were issued annually from 1882 until 1913, reaching a peak of 3,000 claims in 1892. Despite the large number of individual claims and patents, in a brief time the mineral lands in California and the neighboring states came under ownership of wealthy individuals and large corporations.

The liberality of Congress to get-rich-quick gold seekers was due both to political influences and to the desire to encourage the production of precious metals to aid the Civil War effort and thereafter to aid in restoring the national currency to a specie basis. Because of the rapid decline in mineral prospecting in the West at the turn of the century, there has been no occasion to change the law.

In the meantime, oil—"black gold"—on the public lands became a problem. In 1898, Congress extended the placer-mining law to petroleum deposits with some modifications. The rush to take advantage of its liberal provisions threatened a rapid exhaustion of petroleum reserves. Moreover, the importance of having a petroleum reserve for the use of the Navy forced Congress to curb the over-rapid exploitation. It was not until 1920, however, that the Mineral Leasing Act was passed, which provided for an orderly disposal of mineral resources on public lands. Under the provisions of the act, which applies to other minerals besides petroleum, such as coal, sulphur, phosphate, etc., a royalty of 12½ per cent of production is paid to the government. The new arrangement, like others made previously, did not eliminate fraud, deceit and political corruption, as witness the notorious Teapot Dome scandal of 1924.<sup>10</sup>

### The Engrossment and Concentration of Mineral Lands

Mining of minerals during the last two centuries, like timbering, has become a large-scale industry, requiring large acreages. This has led to a relatively rapid engrossment of mineral lands by single interests. Notwithstanding congressional efforts to guard against monopolization of mineral deposits on the public domain, concentration of large areas by private owners has gone on unabated, and the ownership of the most valuable deposits is now concentrated in a few hands, comprising mostly gigantic corporations.

The process by which this development has been accomplished is much the same as that experienced in the field of forest areas. As stated by Professor Gates: "American individualism, the belief that private interests could best and most usefully explore the mineral resources of the public domain, has been responsible for the transfer of the Calumet and Hecla copper of Michigan, the Anaconda's 'World's Richest Hill' lode in Montana, the Mesabi iron field in Minnesota and other valuable deposits to private ownership. Private enterprises rapidly developed

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<sup>10</sup>For an analysis of the working of the Mineral Land Acts which shows their unsuitability to present conditions and the opportunities for fraudulent patents, see Marion Clawson, *op. cit.*, pp. 76-81, 303-6.

these and other natural resources and excited national pride in the growing industrial strength of the United States. Before long, however, the fear was aroused that monopoly was being established in the mining industry as in manufacturing, transportation, banking, and in land ownership, and that too much economic power and that too much wealth was in too few hands. Again, however, it was from the conservationist that the impetus came for government reservation of mineral lands and the practice of leasing."<sup>11</sup>

### The Engrossment of Coal-Bearing Lands

Although coal mining in America began in colonial times, it was not until after the turn of the nineteenth century that coal became important as a source of fuel and energy. With this development came a scramble to possess coal-bearing areas, and a period of engrossment developed, particularly in the anthracite region of Pennsylvania. In this section occurred the earliest attempts to monopolize mineral resources in the United States; and the history of them, though constituting examples of individual enterprise, foresight, and progress, has been marked by what may be called depredation, notorious waste, and industrial conflict.

In the early decades of the 1800s, when the value of anthracite for heating and smelting purposes was demonstrated, what was considered wastelands in the mountainous regions of the Wyoming and Susquehanna valleys of Pennsylvania were eagerly acquired by a few individuals, and these acquisitions laid the foundation for the gigantic combinations of coal and transportation concerns in the United States.

The earliest recorded attempt to exploit coal lands is ascribed to Colonel Jacob Weiss, who lived near Mauch Chunk, in the Lehigh region of the anthracite area. Weiss in 1791 took a piece of coal, turned over to him by a hunter, to Philadelphia and showed it to some friends, among whom was Robert Morris, the financier of the Revolution, at this time heavily engaged in land-grabbing. These friends or-

<sup>11</sup>Paul Wallace Gates, "From Individualism to Collectivism in American Land Policy," in Chester McA. Restler, ed., *Liberalism as a Force in History*, p. 32.

ganized the Lehigh Coal Mine Company, an unchartered association which purchased ten thousand acres of coal lands.<sup>12</sup> Difficulties in transporting the coal to the market (Philadelphia), however, prevented the enterprise from becoming an immediate success; but in later years, through improvement of navigation on the Lehigh River, the enterprise received renewed vigor.

When it was proven that anthracite could be burned in iron furnaces, other capitalists, among whom were Josiah White, John Drinker, and Erskine Hazard, bought up coal lands in the same region and, by securing a charter for the Schuylkill Navigation Company and a lease of the property of the Lehigh Coal Mine Company, entered the coal-producing business. During the next three decades, and in fact continuing into the present century, the monopolization of the anthracite-coal lands went on, at times at a feverish pace. Beginning about 1812, William and Maurice Wurts, merchants of Philadelphia, bought up large areas of coal lands around Carbondale, Pennsylvania, at prices ranging from fifty cents to three dollars an acre, and a decade later succeeded in interesting New York capitalists in organizing the Delaware and Hudson Canal Company, a project to bring the coal to the New York market. This and other engrossing of coal lands by individuals and corporations, in combination with the construction, ownership, and operation of canals and railroads, led to monopolization of the anthracite-coal-bearing area by scarcely more than a half dozen corporations operating as a rule both as coal-producing and as transportation concerns.<sup>13</sup>

<sup>12</sup>See Eliot Jones, *The Anthracite Coal Combination in the United States*, p. 10.

<sup>13</sup>The principal anthracite-mining and railroad companies that developed from ownership and lease of lands are: the Reading Company, the Delaware and Hudson Company, the Delaware Lackawanna & Western Railroad, the Lehigh Coal and Navigation Company, and Coxe Brothers Company. Through congressional enactments and the operation of the anti-trust laws, the anthracite-mining operations (except in the case of the Delaware and Hudson Company) have been divorced from the transportation operations, with the result that the original mining companies or those subsequently created to take over the coal properties of the railroad companies are ostensibly owned by separate sets of stockholders. Jones, *op. cit.*

### The Engrossment of Iron-Ore-Bearing Lands

The story of the engrossment of iron-ore-bearing lands follows a similar pattern to that of coal, but here the public domain was more largely involved. Congress, as we have seen, endeavored quite early to classify mineral lands separately in the public land distribution and provided for leasing arrangements, but, as in the case of almost all of the laws relating to the public domain, these efforts accomplished little. Certainly they did not prevent private engrossing of a large part of our most valuable resources, and much of it for fraudulent and detrimental purposes.

The acquisition and exploitation of iron-bearing areas are an example. Though originally conducted as a local industry on a small scale, modern iron mining, like that of coal and most other mineral production, has become essentially a large-scale industry and requires heavy capital investment. This development gives an incentive for ownership under a single control of the iron-ore-bearing lands. Moreover, the rapid expansion of the national territory and the creation of economical transportation facilities have, through the force of competition, altered from time to time the areas of iron mining and concentrated the main producing sections in regions where the ore can be mined most economically and most profitably.

This economic law is responsible for the engrossment and development of the Lake Superior iron region, which, for half a century, has produced the bulk of iron ore taken from American soil. Although the presence of iron in the region was known to the early settlers, it was not until 1844 that United States Government surveyors located the large iron-ore body there. Three years later, as we have seen (p. 208), Congress authorized the sale of a portion of these lands under liberal terms, but the region was largely neglected by speculators until just prior to the Civil War. One reason for this was the lack of means for transporting the ore, but in 1855 the ship canal around the rapids at Sault Ste. Marie was opened, affording relatively economical transportation by water to eastern iron and steel centers.

All this gave an impetus to engrossment of ore-bearing areas in the

Lake Michigan and Lake Superior ranges. In their competition for adequate ore supplies, the large steel-producing companies of the nation began a scramble to acquire both the ore lands and the railroads of the region. Some, like the Great Northern Railroad, which already held ownership of bearing lands, proceeded to add to its holdings. Individuals, also, like the Merritt Brothers, acquired large tracts,<sup>14</sup> but these in the main, by hook or by crook, came into the possession of the steel companies or their affiliates. At the end of the nineteenth century, just before the organization of the United States Steel Corporation, almost all of the important ore ranges in the Great Lakes area were monopolized by about a dozen steel companies, and there was hardly a handful of independent ore companies in active operation. In fact, one of the chief causes leading to the creation of the gigantic United States Steel Corporation was the monopoly advantage gained by its ownership or control, through leases, of most of the active iron-ore-producing region of the nation.<sup>15</sup>

### Exploitation of Oil-Bearing Lands

Petroleum production, though of relatively recent origin, has rapidly become the most important mineral industry in the United States. Its output in commercial quantities began in 1859, when E. L. Drake, drilling for water near Titusville, Pennsylvania, "struck oil." The news of this discovery spread rapidly and led to a rush to acquire land in the region. Never before, except possibly during the California gold rush, was there such eagerness on the part of capitalists, speculators, and "get-rich-quick" seekers to exploit a natural resource. An adequate detailed account of the spreading out of the search for petroleum-bearing soil is not required here. It is the most spectacular episode in the economic history of the nation. Almost one half of the United States, exclusive of Alaska, is known to hold petroleum deposits, though not all of this is yet producing in commercial quantities.

<sup>14</sup>See *Seven Iron Men*, by P. H. De Kruif, for the story of the ore-land acquisitions of the Merritt Brothers.

<sup>15</sup>For a detailed account of the ore-land holdings and leases of the United States Steel Corporation, see the *Report of the Commissioner of Corporations on the Steel Industry*, 3 vols., Washington, 1911-13. See also Henry Raymond Mussey, *Combination in the Mining Industry*.



This rising tide of oil production, as it spread over the nation, covered much of the undisposed public domain. It has already been noted that as there was no specific legislation relating to the disposal of oil-bearing lands, the act of Congress of July 5, 1866 (30 U.S.C.A. 21), which related to precious metals, was applied. Under this act, lands valuable for mineral content could be claimed under regulations by location and discovery similar to the methods that prevailed in the mining regions of the Far West, and patents were issued for limited areas after the claims were proven. Around the turn of the last century, however, a strong conservation movement developed, and by the so-called Separation Act of July 17, 1914, a policy of reserving the mineral contents of public lands was adopted, the surface only being made available for homestead entry.

In 1908 the government became alarmed at the oil shortage, and an endeavor was made to withdraw the entire public domain from oil discovery under the 1866 mining law. Nothing along this line was accomplished, however, and oil prospecting on the public domain continued at an increasing rate. This brought a statement from the director of the United States Geological Survey, recommending a withdrawal of all oil-bearing public land from disposal, not so much to preserve these lands for the future as to prevent the waste of a valuable natural resource.<sup>16</sup> President Taft took such action, which was subsequently confirmed by Congress. However, it was not long before "oil shortages" developed because of mass production of the automobile and the growing use of petroleum for fuel following the gasoline scarcity that developed during World War I. This led Congress to pass the Oil Land Leasing Act of February 25, 1920 (41 Stat. 437), probably the most constructive piece of legislation relating to the public domain that has ever been enacted.

Under the act, applicants were granted a permit to prospect for oil upon limited areas of the public domain for a period of two years. If they discovered oil or gas they would receive a lease for twenty years with certain preferential rights of renewal and, as a reward for discovery, one fourth of the tract leased at a royalty of 5 per cent and the

<sup>16</sup>See U. S. Geological Survey Bulletin No. 623, p. 133.

balance at a sliding-scale royalty of from  $12\frac{1}{2}$  per cent to  $33\frac{1}{3}$  per cent. Power was given the Secretary of the Interior, under the act, to supervise closely the operations of the lessees, and provision was made to distribute a portion of the revenue from royalties to the states in which the leased land was comprised, to be used for road building and educational purposes.

The act, on the whole, has been successful. It has led to oil exploitation on the public domain at a moderate rate, without waste of natural resource, and it has obtained for the public at large a share of the revenue and wealth which would have been lost if the land had been disposed of freely or for a moderate cash compensation.

The Mineral Leasing Act of 1920 has been amended several times since its original passage. In its present form the act provides for two types of oil and gas leases, non-competitive and competitive. Non-competitive or "wildcat" leases are issued for tracts outside of known producing oil fields. Applicants for these leases are limited to an area of 15,360 acres in any one state and a maximum of 2,560 acres in a single lease. Such leases for prospecting are for five years at a nominal rental, and the drilling is supervised under regulations of the United States Geological Survey. If oil is struck, the lessee pays a royalty of  $12\frac{1}{2}$  per cent on oil or gas produced.

Competitive leases, so called, are issued for lands known to produce oil in commercial quantities. The leasing is done under competitive bidding, and the successful bidder must pay the royalty rate specified in the notice issued when the land is set up for bidding, together with a specified cash bonus to be paid when the lease is granted. The amount of the royalty and the cash bonus is based on the judgment of the experts of the United States Geological Survey. Despite the sharpness of the terms, compared with previous disposal practices, the number of lease applicants, though varying from year to year, has shown an increasing trend.<sup>17</sup>

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<sup>17</sup>Clawson, *op. cit.*, pp. 304-5. For United States policy toward oil lands, see John Ise, *The United States Oil Policy*.