

APHAEL ZON (1874-1956), the architect of research in the U.S. Forest Service, built, like all men, on the beliefs and ideas of those who went before him.* His concept of the man-land relationship and its relevance to forestry emerged from a nexus of views reacting to the fact that industrial capitalism in America was devising ever more sophisticated methods of circumventing the limits of nature for the sake of expansion and profit. Some perceptive Americans of the late nineteenth and early twentieth centuries began to wonder whether men, in a mechanistic system of values, were becoming the tools of their tools— whether the qualitative was being subordinated to the quantitative.⁵⁹ Such troubled observers of the changes in American life often saw the problem as blind men "see" the elephant—in parts. Their views frequently clashed, but out of this clash the forest conservation movement was born.60

Among the precursors was George Perkins Marsh who, from the perspective of a cultural geographer in his magnificent Man and Nature (1864), pointed to the delicate interrelationships between plant and animal life in the environment. Concerned with deforestation, Marsh cited lessons from world history to show how the Earth had been modified by human action. Aware that primitive ways would inevitably succumb to human art and technology, he counseled caution and suggested means for man to preserve the harmony or balance in nature.61 Lester Frank Ward. one of the foremost participants

in the "revolt against formalism" in the social sciences, rejected the applications of Darwinism so widely held in his lifetime. A strong advocate of planning, he emphasized man's capacity to direct and even restructure both nature and society.



University of Minnesota, courtesy of the author

first students.

making use of the knowledge of trained experts. Two such forestry experts, both of whom left their mark on Zon, were Bernhard E. Fernow and Gifford Pinchot. Fernow, born and trained in Germany, arrived in America in 1876 and a decade later became head of the Department of Agriculture's Division of Forestry. He was responsible for many scientific studies in forest botany and timber physics. Fernow contended that only by means of national forest reserves could Americans guard against woodland devastation by "a practical application of rational forestry methods and a more economic use of supplies."62 In 1898 Fernow began a distinguished career as an educator at the New York State College of Forestry at Cornell University, where Zon was one of his

Gifford Pinchot studied at L'École Nationale Forestière in Nancy and served a practical apprenticeship in forest management at the Biltmore Forest on the Vanderbilt estate in North

Carolina. He succeeded Fernow in 1898 as chief of the Division of Forestry; seven years later he converted it to the U.S. Forest Service and took control of a vast system of forest reserves, previously under Interior Department jurisdiction. Pinchot saw in these early years of the forestry movement not only an unresolved debate over the ultimate responsibility for decisions about forestland use but also a struggle over the question of whether forestry was "a business proposition to be practiced with a due regard for financial profit" or was a "public cause to be striven for

with something akin to religious zeal."63 As Donald Worster has pointed out, "For Pinchot, as for

*Part 1 of this article appeared in the January issue; it emphasized Zon's career in the Forest Service.

⁵⁹Leo Marx, "American Institutions and Ecological Ideals," Science 170 (November 27, 1970): 948.

60 The following paragraphs owe much to Donald Worster, ed., American Environmentalism: The Formative Period, 1860-1915 (New York: John Wiley & Sons, 1973).

61A definitive study is David Lowenthal, George Perkins Marsh, Versatile Vermonter (New York: Columbia University Press, 1958). On Marsh's linking of nineteenth-century transcendentalism with conservationism of the early twentieth century, see Arthur A. Ekirch, Man and Nature in America (New York: Columbia University Press, 1963), pp. 70-80.

62Bernhard E. Fernow, White Pine Timber Supplies, Senate Doc. 40, 55th Cong., 1st Sess. (1897), p. 8. Fernow is praised by his biographer as "the first advocate of large-scale scientific forest management in North America." See Andrew D. Rodgers III, Bernhard Eduard Fernow: A Story of North American Forestry (Princeton, New Jersey: Princeton University Press, 1951), p. 34. For a compilation of research done largely under Fernow's supervision within the Division of Forestry, see Fernow, Report Upon Forestry Investigations of the United States Department of Agriculture, 1877-1898 (Washington: GPO, 1899).

63 Franklin W. Reed, "Is Forestry a Religion?" Journal of Forestry 28 (April 1930): 463. In addition to biographical works on Pinchot noted in the first part of this article, see M. Nelson McGeary, "Pinchot's Contributions to American Forestry," Forest History 5 (Summer 1961): 2-5.

APRIL 1980 87 Theodore Roosevelt, conservation was part of a national revival crusade for rectitude, patriotism, efficiency and strenuous living," with the Forest Service in the role of expert manager of the national forests for the general welfare.⁶¹

On the other hand, naturalist John Muir was less concerned over an imminent "timber famine" than a famine of "unspoiled land." Representing a less scientific viewpoint in the "biocentric revolution" of the early twentieth century, Muir rejected the commodity view of nature in environmental management and became an ardent champion for the cause of wilderness preservation.65 Renowned Cornell University horticulturist Liberty Hyde Bailey, whose remarkably long life (1858-1954) included an apprenticeship under Asa Gray at Harvard, espoused a land ethic that shifted man's "dominion" over Earth from the realm of trade to the realm of morals. "To live in sincere relations with the company of created things and with conscious regard for the support of all men now and yet to come, must be of the essence of righteousness."66

An ecologist of broad vision with whom Zon occasionally corresponded was Aldo Leopold.67 With a background in both forest and wildlife management, Leopold saw the need for man to view the land as a community and to use it with love and respect. Unlike some modern ecologists who closely follow their academic and scientific fields of specialization, Leopold emphasized the broad connotations of human ecology. "Our engineering," he observed, "has attained the pearly gates of a near-millenium, but our applied biology still lives in nomad's tents of the stone age." Critical of tenets of "salvation by machinery," he warned, "We are remodelling the Alhambra with a steam shovel." Capitalism, socialism, communism, fascism, or technocracy could not provide an ethic of love for the land. Only respect for the

⁶⁴Worster, American Environmentalism, p. 84.

65 Biographical studies include Linnie Marsh Wolfe, Son of the Wilderness: The Life of John Muir (New York: Alfred A. Knopf, 1945); Herbert F. Smith, John Muir (New York: Twayne Publishers, 1965); Holway R. Jones, John Muir and the Sierra Club: The Battle for Yosemite (San Francisco: Sierra Club, 1965); and T. H. Watkins, John Muir's America (New York: Crown Publishers, 1976).

66 Liberty Hyde Bailey, The Holy Earth (New York: Macmillan, 1915), p. 15. For biographical treatments, see Andrew Denny Rodgers III, Liberty Hyde Bailey: A Story of American Plant Sciences (Princeton, New Jersey: Princeton University Press, 1949), and Philip Dorf, Liberty Hyde Bailey: An Informal Biography (Ithaca, New York: Cornell University Press, 1956).

⁶⁷Leopold's sophisticated vision of evolutionary thought as applied to natural resource development and his call for recognition of a moral imperative for stability of the ecosystem could check the ravages of an unthinking drive to dominance by man. 68

Thus the zeitgeist for a period of accelerating use and abuse of natural resources in America was broad enough to include a reform Darwinist mastery over nature, a more efficient management of nature by experts applying their skills on behalf of the general welfare, and a solemn call for reverence toward the ecological system of which man was but a part. Traces of all these themes may be seen in the land-use tenets that emerge from Zon's unpublished and published writings.

Zon's Land-Use Credo

To Zon, natural vegetation was perceived as an integration of climate, soil, and animal life and was therefore a reliable indicator of land-use potential. The forest was essentially a tree society, with silviculture being "nothing but ecology confined to the highest form of plant associations." He contended that "only in forestry does ecology attain its greatest practical justification and development." Although there was a struggle in the plant society forest, the tree community was also a place where the components help each other by keeping soil, moisture, and climatic conditions favorable to all. ⁶⁹

But Zon was concerned about the effect of ur-

conservation can best be seen in his Sand County Almanac, and Sketches Here and There (New York: Oxford University Press, 1949). Also helpful are two of his articles in the Journal of Forestry-"A Biotic View of Land" 37 (September 1939): 727-30, and "The Conservation Ethic" 31 (October 1933): 634-43—and his text, Game Management (New York: Charles Scribner's Sons, 1933). For appraisals of Leopold's significance, see Susan L. Flader, Thinking Like a Mountain: Aldo Leopold and the Evolution of an Ecological Attitude Toward Deer, Wolves, and Forests (Columbia, Missouri: University of Missouri Press, 1974). Two general articles giving credit to Leopold's contributions to ecological thought are Joseph Wood Krutch, "Conservation Is Not Enough," American Scholar 23 (Summer 1954): 295-305, and Frank Fraser Darling, "A Wider Environment of Ecology and Conservation," *Daedalus* 96 (Fall 1967): 1003-19.

⁶⁸Leopold, "The Conservation Ethic," pp. 636-37, 639-40, and Darling, "A Wider Environment," pp. 1005-06.

69Zon, "Natural Vegetation as a Key to Conservation Practices," in Conservation of Natural Resources: Some Fundamental Aspects of the Problem (Philadelphia: University of Pennsylvania Press, 1941), p. 1; Zon to F. W. Clements, August 16, 1907, Container 3, Correspondence of the Office of Silvics, Series 107, Records of the U. S. Forest Service, Record Group 95 (hereinafter cited as RG 95), National Archives, Washington, D. C.; Zon, "The Forest—A Plant Society," Minnesota Conservationist, No. 27 (August 1935), pp. 18-19.



Gifford Pinchot, Zon's lifelong friend.

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banization and industrialization on the biotic balance. A predominantly urban population was losing its likeness to "the noble Adam, the father of all humanity." Like the legendary giant Antaeus, whose strength was renewed every time he touched the earth, so also the strength of America must come from the fullest use of the land. Overproduction and mechanization all pointed to the need for finding a new outlet for surplus capital and surplus labor, rather than turning to a doctrine that advocated using up, wearing out, and replacing. Zon wrote in 1931:

We went through this continent as an invading army, pitched our tents, built our Main Streets just long enough to skim the cream and waste the rest. We have destroyed our forests; we have almost exhausted our mines; we have depleted most of the fertility of our soils and allowed it to be washed away; we have disfigured the beautiful landscape of our country; we have polluted our rivers and turned them from objects of utility into sources of menace to life and property.

Such a record of heedless waste of natural resources led Zon to applaud the integrational views of regional planner Benton MacKaye as embracing "an orderly and planwise relation of man to his entire environment, both physical and social," a "humanization of the philosophy of conservation as applied to community life." But

there would be strong resistance to MacKaye's vision, warned Zon, from a nation weaned on the doctrines of individualism.⁷⁰

Zon was a student of Darwinism. In an early essay he showed that Darwin's notion of natural selection was dealt with almost thirty years before the first edition of The Origin of Species (1859) in a little-known work by Patrick Matthew on naval timber and arboriculture. Zon went on to argue that the field of forestry was a particularly potent source of data on natural selection. Trees in a forest community compete for life and moisture both above and beneath the ground. A few trees form an upper class as they attain the most success, some others merely hold their own in the struggle and form a middle class. while the rest are the proletariat, with the great majority being hopelessly defeated. There is constantly a struggle, furthermore, for space between the forest and the adjoining meadow, swamp, or other vegetation community. But the forest, more than any other plant-animal system, can change the ensemble of conditions over the general area it occupies, rendering the area less hospitable to its enemies by altering light, temperature, humus content, and acidity of the soil. Forestry as a science was "nothing else but the controlling and regulating of the struggle for existence for the practical end of man"; it was "the study of the laws which govern the struggle for existence." 71

In a letter to his friend Gifford Pinchot, Zon spoke of still another struggle, one being carried on in the realm of public policy.

The underlying fundamental issue is whether we are to adhere to the law of the jungle—everyone for himself and the devil take the hindmost, the race belongs to the fleetest, the strong and powerful should not be interfered with—or to the law of organized society in which the government protects the weak and restrains the strong and has as its goal the welfare of the community as a whole.⁷²

There was no doubt in Zon's mind as to where the humane scientist should stand.

A central theme of Zon's life was the belief that the scientist was responsible for using his expertise for the improvement of social welfare.

⁷⁰Zon, "Toward Fuller Use of All Land," Land Policy Review 7 (Fall 1944): 21; Zon, "The Society Comes of Age," Journal of Forestry 29 (March 1931): 313-14; Zon, review of Benton MacKaye's The New Exploration: A Philosophy of Regional Planning in Journal of Forestry 26 (December 1928): 1029-30.

⁷¹Zon, "Darwinism in Forestry," Proceedings of the Society of American Foresters 8 (October 1913): 289-94; Zon, "The Forest—A Plant Society," p. 6.

⁷²Zon to Gifford Pinchot, July 8, 1931, Box 6, Raphael Zon Papers (hereinafter cited as ZP), Minnesota Historical Society, St. Paul.



Cutovers figured prominently in Zon's thinking about land use. Many logged-over areas, such as this one on Michigan's Upper Peninsula, were better suited to tree growing than to agriculture.

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"The quality that endeared him to all that knew him best," Earle Clapp wrote of Zon, "was that he was intensely human." Zon believed that scientists should be concerned about a virtually unrestricted competitive system that was at least in part responsible for a contingent of unemployed workers. His fervent hope was that the scientific community would divest itself of its "white collar snobbishness," and its reputation for serving only the interests of the wealthy class, by joining hands with the toiling classes for the "orderly progressive development of our country."

If scientists generally had a social responsibility, so also did those engaged in forestry have a mandate to work toward the goal of utilizing forestland for the benefit of the greatest number of citizens. The use of forests, as well as the use of land and natural resources generally, were rightly matters of public interest. The several uses, moreover, should be coordinated for maximum benefit to the people. In a remarkable essay demonstrating the breadth of his insights in the fields of anthropology, ethnology, geography, history, and linguistics, Zon described the three stages in man's evolving relationship to the forest. In the first, civilization is dominated by the forested areas of the environment; in the second, civilization strives to overcome the forest; and in the third stage, civilization comes to terms with the forest. Zon saw early twentieth-century America going through a time of crisis, a period in which the future availability of timber was increasingly questioned, in which erosion and floods were becoming greater problems, and in which cutover lands unsuited for agriculture

Zon differentiated between a conservation mentality based on sentimentality-striving to save this or that animal, this or that tree—and a factually tough-minded but humane movement for the development, efficient utilization, and preservation of natural resources. Thus he could, and did, speak out against both pseudoconservationists, whom he saw as merely stalking-horses for hunters, resort keepers, and ammunition makers, and against the snobbish foresters who were "becoming more of a trade union than a professional society for the defense of the public good," reactionaries who persisted in their narrow ways while "the entire country is feeling the refreshing breezes of liberalism." As he neared retirement, Zon wrote with some satisfaction in his diary, "The Forest Service has caught up with me" on a social philosophy of land use that ten or fifteen years previously might have been attacked as "terribly radical.""75

One of the most divisive questions among forest conservationists was whether the practice of

were being wasted. His conclusion, that "it has now become important to civilization to preserve and restore the forest instead of struggling against it," implied a new movement toward rational management for Americans. Forests must now be seen as areas for producing crops that man needs and must be dealt with according to economic principles.⁷⁴

⁷³Earle H. Clapp, "Zon," American Forests 62 (December 1956): 46; Zon, "Conservation and Unemployment," unpublished manuscript, January 1915, Container 49, Research Compilation File, Series 115, RG 95; Zon to Barrington Moore, June 28, 1918, Box 2; Zon to Pinchot, July 7, 1919, Box 3, both ZP. See especially Zon's speech to members of the Research Conference of the National Academy of Science, March 2, 1917, Drawer 362, Series 115, RG 95.

⁷⁴Zon to Glen W. Herrick, August 2, 1920, Box 3, ZP; Edward Richards, "Raphael Zon—The Man," Journal of Forestry 24 (December 1926): 857; Zon, "Forests and Human Progress," Geographical Review 9 (September 1920): 139, 163, 166; Zon, "Silviculture as a Factor in Maintaining the Fertility of Forest Soils," International Congress of Soil Science, Proceedings and Papers 4 (1928): 577.

⁷⁵Zon, "Perspective—Does It Dim with Age?" undated manuscript, Box 1; Zon to L. B. Nagler, December 31, 1928, Box 6; Zon to F. A. Silcox, February 26, 1936, Box 8; Zon to G. P. Ahern, August 24, 1933, and Zon to Edward Richards, December 22, 1933, both Box 7, all ZP; Zon, "The Society Comes of Age," pp. 308-15; Zon Diary, April 12, 1941, Diaries, 1906-1944, Series 147, RG 95.

sound forestland use was to take place primarily on public or on privately owned forests. On this point Zon clearly favored the European approach of government regulation on behalf of the public welfare, preferably through communal forests, agreeing with Carl A. Schenck that "unlimited production implies necessarily unlimited waste." Zon would require that private forestland devastators reforest land they had thoughtlessly denuded. If the owners refused, the government should take over the land, use it as a lien, do the work of reforestation, and charge the owners a percentage as interest on the expenditure until the land was redeemed. He was convinced that public acquisition alone would not stop wasteful lumbering practices. The need for regulation was real, and public apathy was great. Zon gloomily wrote:

It looks to me as if we are to go through the devastation process and then start on the slow march of reclamation. The people, of course, will have to pay through their noses. . . . Those who don't see anything anomalous in the situation work in harmony with their fellow men while we outcasts, torn by desire to help on one hand and yet clearly realizing the impotence of all half measures, live in a spiritual hell. 76

Appeals to social conscience or self-interest had influenced only a small portion of the nation's private owners to manage forests for the continuous production of timber. Zon saw some possibilities in relaxation of the federal antitrust laws, which would allow lumber companies to normalize production. He also thought that ruinous competition might be reduced by trading off cheap and long-term credit for an end to waste of forest resources. A federal forest board could carry this out, he thought, following the example of the Federal Farm Board. A Forest Service critic of Zon's viewpoint argued that lines of communication should be kept open between the professional foresters, acting as guardians of the public interests, and the landowners, who were more sympathetic to emphasis on forest construction as being beneficial to them and to the whole nation. Not moral fervor and condemnation of greed, but understanding and application of principles of business, finance, and economics, claimed the critic, were the keys to gaining support from private landowners and lumbermen.77

⁷⁶Zon, "Communal Forests," undated manuscript, Drawer 391, Series 115, RG 95; C. A. Schenck to Zon, April 26, 1922, Zon to Pinchot, May 23, 1933, and May 24, 1933, all Box 7; Zon to G. P. Ahern, September 19, 1929, Box 6, all ZP.

But for Zon," 'Stop forest devastation' is still the banner under which we foresters march." Eliminating wasteful competition and controlling prices and production, he insisted, must be preceded by controlling the amount of timber cut. Through newspaper editorials, letters to the editor, and solicitation of support from organized labor, women's clubs, and conservation groups, public sentiment could be mobilized to counteract the opponents of regulation. At the same time, private owners of timberland should be aided by the dissemination of relevant findings in forest research, by help in forming cooperatives to market their products, by fire protection, and by modification of forestland tax laws. Zon thus preferred a "both/and" to an "either/or" approach to the question of public versus private forestry. He concluded that there were only two ways to safeguard the immediate future of the nation's forests: public purchase of forestlands or public control of cutting on private lands. But the regulation issue, for three decades or more a point of contention in the forest community, finally dropped out of public sight in the early 1950s. Efforts to pass laws controlling cutting on private lands, Zon wrote in 1954, "no longer conformed to the realities of the situation." It was necessary to "hold the trenches" and protect the integrity of the existing national forest system, national parks, and public land policies.78

The nation's cutover lands presented one of the greatest challenges in land-use decisionmaking. Here the question of agriculture versus forestry as "highest use" engendered sharp discussion. While he was chief in the Office of Silvics. Zon had already maintained that forestland was important not only as a producer of timber but also as a protector of soil from erosion, as a regulator of streamflow, and as a wholesome influence on the lives of people. What was needed above all was a thorough survey to determine ways of bringing about "the most productive use of our greatest resource, the land." During his years as director of the Lake States Forest Experiment Station, Zon had opportunities to see the tragic consequences of turning once-forested, tax-reverted land to agricultural uses on the "new public domain." He could see in the cutovers of Michigan, Wisconsin, and Minnesota (as well as the Gulf South and the Pacific Northwest), the unfortunate syndrome of economic upset when lumbering was unable to provide local employ-

⁷⁷Zon and William N. Sparhawk, America and the World's Woodpile, U. S. Department of Agriculture, Circular No. 21 (Washington, 1928), pp. 1-2; Zon to W. H. Kenetz, March 4, 1930, and E. W. Hartwell, "A Voice from the Wilderness," undated manuscript, both Box 6, ZP.

⁷⁸Zon to Pinchot, May 23, 1933, Box 7; Zon, "Summary and Activities to Date and Future Lines of Action," undated manuscript, Box 1; Zon, "The Tragedy of the Cut-overs," unpublished manuscript, April 14, 1938, Box 9; Zon to Cornelia B. Pinchot, October 12, 1954, Box 14, all ZP; Zon, "Forests and Rural Life," Lake States Experiment Station, *Report* (1942), p. 68.

ment, of forced emigration of vigorous and enterprising elements, of an increasing burden of taxation upon those remaining, of widespread forfeiture and tax delinquency, and of the futile attempts to practice agriculture on marginal lands.⁷⁹

State efforts to deal with the problem included attempts to keep land on the tax rolls by showing leniency to delinquent taxpayers, sale of lands listed for nonpayment of taxes at bargain prices, efforts to reduce public expenditures by eliminating services through zoning, alteration of forest tax laws to encourage private owners to retain lands still growing timber, and creation of state and county forests, game refuges, and parks (but with inadequate provision for management). But these efforts had not been significantly effective in stemming the tide. Zon pointed to these inadequacies as examples of inhumane land use and as evidence of the need for better land resettlement policies, for wiser handling of timber resources, and for more purposeful long-range development of the regions involved. In answer to the argument that demand for wood products would diminish as new forms of building materials were developed, Zon asserted that cellulose and lignin from timber remained the basic materials of lacquer, rayon, explosives, photographic film, ethyl alcohol, and countless other products. Planned forest culture, recreational development, and cooperative farming on lands leased from federal, state, or local governments were, in Zon's estimation, the keys to wise and socially sensitive use of the cutover areas. Agriculture should be supplemented by part-time employment in small industries using raw materials available in the region. The colonialism of the past, in which lumber and ores were exported, leaving scarred and devastated lands in their wake, and in which unscrupulous promoters lured settlers with fantastic promises of agricultural success, must give way to social planning and the application of forest management techniques. Whether the nation's cutover regions remained virtual slums or became promising new frontiers depended largely upon government policies adopted for development of the region's lands, forests, mines, and waters. Nature was an "open book for those who care to read," one that could provide useful guidelines for harmonizing conservation and development.80

Zon's ideas, like Leopold's, may be seen as a sort of bridge between the ardent, if sometimes ineffective, conservationism of the early twentieth century and the ecology-mindedness of a later generation shocked into protest by the writings of Alvin Toffler, Rachael Carson, and Barry Commoner. Similarly, Zon's political views linked the Progressives' and New Dealers' enthusiasm for pragmatic and socially responsible use of government power to the concept of the welfare state of the New Frontier and Great Society of the 1960s.

Zon's Political Views

It was perhaps inevitable that Zon's socioeconomic and political views, based on a wide knowledge and rich background of experience with Old World political systems, a sensitivity to the plight of the inarticulate masses, and a keen awareness of limitations and possibilities of public welfare legislation and administration, would arouse controversy. Zon considered himself one of a small group of old Russian intellectuals, products of life in late nineteenth-century czarist Russia. He was also influenced by his reading of Lenin, Trotsky, Emma Goldman, and other socialists and anarchists, but he read critically. It was the forest conservation crusade, however, that gave Zon a vision of how to transform his social sensitivity into meaningful action. He wrote to Pinchot in 1945:

To me, who came to this country somewhat "tainted" with social "heresies" (but heresies no longer), your conservation program provided a concrete and realistic channel for translating those social ideals into actual life. To me, it was unending fascination to watch how your concept of forestry encompassed ever-widening fields of human life and finally emerged as a social philosophy in union with the most creative and progressive thinking of all Mankind.81

For the forestry community, Zon became a sort of "resident expert" on the Bolshevik experiment in Russia. He had contended in 1919 that Lenin's and Trotsky's ideas had not advocated actual

80Zon, "The New Public Domain," American Forests 37 (May 1931): 263-64, 280; Zon, "The Human Side of Land Use," Journal of Forestry 37 (September 1939): 735-37; Zon, "Forestry and the Agricultural Crisis," Annals of the American Academy of Political and Social Science 142 (March 1929): 70-76; Zon, "The Capacity of the Northern Lake States Area to Support Population," talk delivered to the section on Social and Economic Sciences of the Association for the Advancement of Arts and Sciences, June 20, 1939, Box 10; Zon, "The Cut-over Region: A Slum or a New Frontier?" unpublished manuscript, April 2, 1941, Box 11, both ZP; Zon, "Forestry Throws Life Line to Stranded Communities," Minnesota Conservationist, No. 1 (April 1934), pp. 2-3, 14-18; Zon, "Natural Vegetation as a Key to Conservation Practices," in Conservation of Natural Resources, pp. 1-3.

⁸¹Zon to Louis Adamic, August 2, 1939, Box 10;
Zon to Smith Riley, September 28, 1934, Box 8;
Zon to Pinchot, July 13, 1945, Box 12, all ZP.

¹⁹Zon, The Future Use of Land in the United States, U. S. Department of Agriculture, Circular No. 159 (Washington, 1909), pp. 14-15; Zon, "The Tragedy of the Cut-overs," Box 9, ZP.

conquest of capitalist countries so much as they exploited the fact that such societies were dying out from their own excesses, "blazing the way for the masses of other countries to follow in their path." Russia, he believed, was "delivering a message to the world," and even though the Bolshevik experiment might very well fail, the world should give heed to the principles on which it was based. Zon hoped that opportunities would open up for educational exchanges between the new Russian regime and the United States, particularly in the area of his expertise, forestry. *Source of the sexpertise of the

In the mid 1920s, as Stalin was consolidating his power and fascism was rising as a right-wing revolutionary movement in Italy, Zon wondered why Americans condemned methods used by the Communist government in the Soviet Union while praising the tactics of Mussolini. He had hoped that the "Red Scare" would wane and that Americans would be able to view more objectively factors of change in a revolutionary society so that expanded programs of trade and scientific relations between the two nations could be implemented. Although he did not feel that the Soviet experiment in collectivization was feasible or even desirable in the United States, he felt that Americans could learn something from the Soviet Union about the "industrialization of agriculture," particularly the sharing of expensive agricultural equipment, but within the framework of individual ownership of land. To the extent that his hope was for greater national selfsufficiency in access to and use of products, Zon considered himself an economic isolationist. He saw Europe as a poor risk for American investment of accumulated idle capital, declaring to Pinchot, "I would rather build our future on our own people."83

The Nazi-Soviet nonaggression pact of 1939 shocked Zon, as it did many American liberals, but he rationalized that the treaty might have been the result of Soviet loss of confidence in the sincerity of British Prime Minister Neville Chamberlain. Zon was further taken aback by the Russian attack on Finland, evaluating it as "stupid" but again rationalizing that "the Russians were apparently too jittery in their expectation that Great Britain would attack through Finland." Shortly after Hitler invaded Russia in 1941, Zon became a member of the National Committee of the Legion for American Unity and Action to Smash the Axis Powers. In that same

year he had the opportunity to discuss the current situation in Russia with General Yakhnatov, who was then on a lecture tour in the Midwest. In 1943 Zon wrote to William B. Greeley, expressing his hope that the United States and Russia would emerge from the war as "two great democratic countries that will lead the world."

In 1919 Zon thought the League of Nations had the suspicious appearance of being largely an instrument of international bankers for the exploitation of the natural resources of less powerful nations. He believed that the major revolutions of the twentieth century were the result not of Marx's ideas but of the "suppression of the common folks," the "exploitation of man by man and the institutions of colonialism." He became deeply troubled by the connotations of Nazi illiberalism and anti-Semitism in the 1930s, even criticizing those American foresters who wished to visit Nazi Germany. "I cannot imagine how any self-respecting scientist can bring himself to visit a country which deliberately prosecutes any liberal-minded scientist, a country that burns scientific books which do not support the philosophy of Naziism and which prostitutes both science and universities." Destruction of trade unions, state censorship of the press, and limitations on free speech in Nazi Germany led Zon to condemn Hitler's totalitarian regime in 1936 as "an implacable enemy of everything that I consider worthwhile in the field of social relations, literature, and science."85

Zon distinguished between totalitarian wrenching of basic human rights from the individual citizen and the imposing of limitations on private property when necessary to provide the greatest good for the greatest number. Conceiving of conservation as "a fight against the domination of natural resources by private capital," he was convinced of the inevitable need for imposing public controls in one form or another. He wrote to a friend in Sweden, a nation whose public-oriented regulation of forests he admired, "Forest management because of the long time involved

⁸²Zon to Philip P. Wells, March 10, 1919, Box 3; Zon to W. T. Cox, December 28, 1917, Zon to J. M. Cattell, January 19, 1918, and Zon to M. Zaslow, January 23, 1918, all Box 2, all ZP.

⁸³Zon to F. E. Olmsted, December 6, 1921, Box 4;
Zon to Charles L. Pack, February 13, 1926, Box 5;
Zon to Axel H. Oxholm, February 21, 1931, Box 6;
Zon to Pinchot, July 8, 1931, Box 7, all ZP.

⁸⁴Zon to Pinchot, August 23 and December 26, 1939, and Zon to Anton T. Boisen, March 16, 1940, all Box 10; Zon to Anthony W. Smith, June 25, 1941, and Zon to William B. Greeley, December 3, 1943, both Box 12, all ZP.

⁸⁵Zon to Pinchot, June 14, 1919, Box 3; Zon, "Doom or Salvation," undated manuscript, p. 24, Box 1; Zon to Ralph Hosmer, June 10, 1933, Zon to Clapp; June 7, 1935, and Zon to F. A. Silcox, May 18, 1936, all Box 7, all ZP. Zon criticized German forester Franz Heske's book (review, New Republic 96 [August 17, 1938]: 55-56) as proposing an inhumane, authoritarian, and feudalistic approach to government regulation of private forests. He also warned a Washington bureaucrat (Zon to Gardner Jackson, November 24, 1942, Box 11, ZP) that a University of Minnesota professor of military history was pro-Nazi.

in the maturing of forest crops, in my opinion, lends itself more readily than any other industry to socialization." Prerevolutionary Russian forestry was also seen as providing a model to be emulated, with working plans for maintaining forest growth in areas needing protection from landslides or floods carried out at the expense of the government. The czarist government also maintained tree nurseries for distribution of seed to landowners, gave medals or prizes for highquality forest management on private lands, and maintained forestry schools. Zon believed that there were ample constitutional means for the federal government to exert similar controls in the United States. It should make fire protection compulsory and place not only national forests but also private "protecting forests" on a sustained-yield basis. This was not socialism but humane use of government powers in an area that private capital had clearly proven its inadequacy.86

As Americans felt the effects of the Great Depression in increasing measure, Zon sharpened his criticism of the heartless philosophy of rugged individualism, which had both neglected and opposed the clarification of economic goals and the implementation of social planning. "We have created a most wonderful and a most tremendous machinery," Zon wrote, "over which we have largely lost control." Too much accumulated capital had been diverted into investments and "development" of areas abroad, under a "provincial and at times silly" foreign policy. This was capital that could better have been used at home to repair damages done to natural resources. Public regulation was probably a necessary stage in order to educate the people in effective means of controlling monopolies. Zon argued for the need to increase taxes on higherincome groups, raise inheritance taxes, reduce the work week, and raise wages to gain a more equitable distribution of wealth. Although he did not agree with his "more radical friends" that capitalism was on a self-destruct course, he was convinced that the economic system needed firmer hands at the controls.87

As a self-declared "liberal of the New Republic

⁸⁶Zon to Austin Cary, September 1, 1917, and Zon to B. P. Kirkland, October 11, 1918, both Box 2; Zon to Henril Carbonnier, September 22, 1926, and Zon to Walter Mulford, September 4, 1920, both Box 3, all ZP; Zon, "Forests and Forestry in Russia," undated manuscript, Container 168, and Zon, "Public Requirements for the Protection of Forest Lands in the Northeast," August 1, 1923, Drawer 408, both Series 115, RG 95.

87Zon to P. S. Lovejoy, May 25, 1931, Box 6; Zon to Pinchot, June 23 and July 8, 1931, both Box 7;
 Zon to Pinchot, May 23, 1940, Box 10, all ZP.

and Nation stripe," Zon saw good reason for optimism concerning candidate Franklin D. Roosevelt's proposals that unemployment be alleviated through soil conservation programs, although he realized that there would be problems involved. He saw Roosevelt's election as giving promise of "a revival of the old [Theodore] Rooseveltian call to action." "I am getting too old to believe in miracles." he wrote to Pinchot, "yet I am not so completely disillusioned in our political life not to be stirred by at least some hope of better days." During the New Deal years he praised FDR's moves in the direction of "social control of natural resources," such as the Civilian Conservation Corps (Zon saw this as the "birth of silviculture in America"), the short-lived forest practices regulations established as part of the Lumber Code under the National Industrial Recovery Act, and various other programs of erosion and flood control.88

Zon remained suspicious of the industry's "benevolent" motives for self-imposed regulations. Reacting in 1941 to a speech by a labor official, advocating labor-management councils in defense industries, he warned, "The extension of democracy from the political arena into the economic field is something which industry by and large is not willing to accept." He proposed instead that consumer representation be provided on industrial councils and that labor unions make themselves more consumer-conscious. After his retirement, he continued to counsel vigilance against powerful organizations and politicians working to weaken control over national parks and forests. Such views led, ironically, to Zon being labeled by some detractors as "fascist" and by others as "socialistic." An irate land booster in Minnesota condemned Zon's article, "America's Rural Slums," by labeling it both totalitarian and utopian and urging "the worthy professor" to "get out of his swivel chair where he has been hibernating for the last many years . . . so he can visit first hand the areas about which he writes." Although some academic foresters characterized Zon's ideas as "too socialistic" or as a form of "new imperialism," Zon insisted that he differed from the "young converts to Socialism," like his friend Robert Marshall, who were swallowing the concept of public ownership without considering whether it would truly achieve the public purpose. Rather, he considered himself to be a pragmatic idealist in pursuing first and foremost the goal of stopping the ecologically thoughtless and humanly wasteful practices of forest destruction.

^{**}SZon, "Our Conservation Presidents," undated manuscript, Box 1; Zon to Arthur Pack, July 16, 1932, Zon to Pinchot, December 2, 1932, and June 16, 1933, all Box 7; Zon to Pack, July 24, 1934, Box 8; Zon to Adamic, August 2, 1939, Box 10, all ZP.



Zon saw in the Civilian Conservation Corps the "birth of silviculture in America." Above, corpsmen spread seeds on tarps to dry in the sun, Kisatchie National Forest, Louisiana.

U. S. Forest Service photo, FHS Collection

Public acquisition, regulation, and private-public sector cooperation were all to be elements in achieving the goal.⁸⁹

During World War II Zon sensed the prospect of a conservative reaction in America once the wartime alliance was no longer a necessity. The actions of the House Un-American Activities Committee (HUAC) under its chairman Martin Dies evidently led Zon in 1942 to affirm to a fellow Forest Service officer, "I have never belonged nor do not belong now to any political group, reform organization, or any organization which Dies characterizes as a Communist front." His loyalty did come under question, however. He served as a trustee on one of the funds established by the will of Robert Marshall, a forester and wilderness advocate who had also been interested in socialism and civil liberties. Here Zon was associated with Marshall's brother, George, who ran afoul of the Dies Committee in 1948. George Marshall was a leader of the National Federation of Constitutional Liberties, an organization that had published a pamphlet titled Investigate Martin Dies and whose financial records and contributors list had been subpoenaed by the committee. Another committee investigating foundations and tax-exempt organizations found that some beneficiaries of Robert Marshall's funds were enterprises of questionable loyalty, thus jeopardizing the careers of federal employees associated with them. In March 1954 Zon, then nearly eighty years old, was informed by the Civil Service Commission that the reports of an investigation submitted to the International Organizations Employees' Loyalty Board contained "certain unevaluated information of a derogatory nature, which, if true, might create a doubt" concerning his loyalty to the United States. Zon was asked to answer or comment "under oath in sufficient detail," but evidently he wrote that he was no longer employed by the Forest Service, having retired in 1944.90 Some items in Zon's papers (ordered by his son to be closed to research until 1980) may provide sharper insights into what must have been a humiliating experience in the frenzied years of the McCarthy era.

To summarize Zon's political views, he wished to preserve American democracy so that it would work for the benefit of the masses.

If democracy . . . permits any group or class to destroy the efforts of the common man to attain security and humble decency, when it drives millions into a position that makes them feel society has no place for them, when it worships the past too much and allows established privileges and out-worn economic theories to prevent practical reform of real and immediate problems, then democracy is on the way to committing suicide, and this we must not allow to happen in America.91

91Zon to Noble Clark, January 23, 1941, Box 10, ZP.

⁸⁹B. P. Kirkland to Zon, November 12, 1918, and Memo for Kirkland from Hugo Winkenwerder, November 8, 1918, both Box 2; Zon to Pinchot, May 24, 1933, Box 7; Zon to Anthony W. Smith, June 14, 1941, and clipping, undated letter to the editor of *United States Week* by Victor E. Tallefson, both Box 11; Zon to Cornelia B. Pinchot, September 8, 1948, Box 13, all ZP.

⁹⁰Zon to C. L. Forsling, September 30, 1942, Box 11; Zon to E. N. Munns, February 18, 1948, Box 12; George Marshall to Zon, April 27, 1948, Box 13; Memorandum to Heads of Departments and Agencies from the Attorney General, April 29, 1953, Pierce J. Geretz to Zon, March 18, 1954, and T. Paul Fairbank to Zon, April 2, 1954, all Box 14, all ZP.

Although he did not consider himself an expert on practical politics, Zon did know forestry from both a practical and theoretical perspective. He was convinced that government leadership in natural resource development presented perhaps the nation's greatest opportunity to demonstrate the efficacy of humane public policies.

Zon's Last Years

When Zon retired as director of the Lake States Forest Experiment Station on September 1, 1944, amidst the ringing praise of his peers, he was determined to avoid becoming detached from human affairs: "forestry, it seems to me, is after all only a small part of a much bigger liberal movement." He hoped to become a "peripatetic lecturer," teaching students of forestry the unconventional wisdom of their chosen profession. 92

One of the first retirement projects of the man Secretary of Agriculture Claude R. Wickard called the "Dean of all Foresters of America" was assisting Gifford Pinchot with his autobiography. Breaking New Ground. The Forest Service provided facilities for this writing and editorial effort. Pinchot wrote in his acknowledgments that without Zon's help "this volume would be unfinished still." Another assignment came from the United Nations' Relief and Rehabilitation Administration, for whom Zon made a study of the furniture and plywood industries. In 1948 he accepted assignments from the Food and Agriculture Organization of the United Nations; these included reviewing and abstracting Russian publications on timber and forestry and acting as a consultant on forestry trends in the Slavic countries. He wrote articles for *Unasylva* and analyzed Stalin's new five-year plan concerning its applications in agriculture and forestry. Zon also revised articles on physical resources and forests for the *Encyclopedia Britannica*. Honors were numerous, but several stand out. He was particularly gratified at being named honorary president of the Seventh International Botanical Congress, held in Stockholm in 1950. Already a fellow of the Society of American Foresters, Zon became in 1952 only the second recipient of that organization's prestigious Gifford Pinchot Medal for eminent service to forestry.93

Zon is remembered by many as much for his

personality as for his achievements, and there is no doubt that his personality had an abrasive component. The researcher, he believed, must be ahead of his time, standing alone and perhaps being exposed to the skepticism and ridicule of others; he must therefore play the unpopular role of "human gadfly," at variance with current orthodoxies, and be "damnably persistent with the buzzing." At times Zon felt depressed by those peers who did not share his determination to find what he called "some new and fresh approach to the forest problem." The dangers of succumbing to misanthropy and cynicism or of retreating into the safer routine of "counting seedlings . . . or speculating on the amount of light that white pine needs when planted under aspen stands" were very real to him. Scattered throughout his papers are revelations of his penchant for condemning slovenly thinking and syrupy sentimentality. He saw himself as a "spirit by nature intransigent and militant, whose flame has only been fed by opposition and obstacles." At a farewell luncheon given for him shortly after his retirement, he declared, "I shall reserve to the very end the right on my own behalf, and others, to criticize and be criticized."94

Ordinarily Zon did not intend his criticism to impugn the character of the person involved. He was concerned with issues, not personalities. To Herman H. Chapman, one of his staunchest critics, he wrote: "Your conservation is damnable; yet it saved us from many disillusions, even if you had to act as a damper upon the enthusiasm and optimism of us younger fellows, . . . you and I hardly agree upon anything, and yet I like your ideas and profited many a time by your incisive criticism." If he told the worst to the faces of his friends, he did it without malice or ulterior motives. Correspondence between Zon and P. S. Lovejoy, for example, shows two strong-minded and decidedly undiplomatic fighters for sound land use exchanging broadsides, while at the same time retaining mutual respect for each other's viewpoints. But Zon was shaken when Earle Clapp warned that his habitual, "almost indiscriminate criticism of practically all men and actions without very much regard to time or place" impaired the work of the Lake States Station and its relations with other units of the Forest Service and outside forestry agencies. Zon responded that he would endeavor to refrain

⁹²Mississippi Valley Lumberman, August 4, 1944, pp. 11-12; Zon to Samuel T. Dana, August 8, 1944, and Zon to Clapp, February 6, 1946, both Box 12, ZP.

⁹³Claude R. Wickard to Zon, January 15, 1945, and Zon to Gardner Jackson, December 8, 1944, both Box 12; C. Skattsberg to Zon, February 1, 1949, and John A. Dodge to Zon, June 12, 1950, both Box 13; Henry Clepper to Zon, August 15, 1952, Box 14, all ZP.

⁹⁴Zon, "The Search for Forest Facts," American Forests and Forest Life 36 (July 1930): 421; Zon to William B. Greeley, October 25, 1926, Box 5; Zon to Tom Gill, October 14, 1929, and Zon to the Committee of the Society of American Foresters, June 14, 1929, both Box 6, all ZP; Zon to Bernhard Fernow, October 1, 1909, Series 107, RG 95; Zon, "Remarks at Luncheon," September 7, 1944, Box 12, ZP.



Zon posed in 1951 with his successors as director of the Lake States Forest Experiment Station, M. B. Dickerman (left) and Elwood L. Demmon (right). Zon served from 1923 to 1944; Demmon, 1944-1951; and Dickerman, 1951-1964.

University of Minnesota, courtesy of the author

from criticism that might cause embarrassment to the Forest Service or to Clapp personally.⁹⁵

It seemed to some of his adversaries that Zon feared neither God nor man. He tended to view religion and science as being incompatible, operating with different methods and assumptions. Religion was based on a faith that might reconcile the individual to the world in which he lives, but, like a painkilling injection, it "numbs the nerves where a keen analysis is needed to uncover the cause and devise a remedy." Science on the other hand was based on a knowledge of facts that could be visualized in one form or another and tested and submitted to experimental techniques. Realist that he was, however, Zon perceived that even science, operating as it does with an exact method, was still "full of fantasies and unproven theories." In addition to knowledge of methodology, scientists needed the ability and courage to think for themselves and look for new vistas and trails to follow. Zon thought that scientists must beware of accepting even the most commonly held axioms without submitting them to critical analysis.96

Zon's concepts and values were shaped by his recreational reading and by his family life. He read widely, not only on political and economic subjects, but sampled as well authors varying from Socrates and Plato to Dreiser, Dostoevski, Pushkin, Gogol, Turgeney, and Gorki. Zon loved to make classical allusions and sometimes to make humorous juxtapositions of proverbs. He could and did discuss intelligently trends in art, religion, and philosophy. Although Zon's family is scarcely mentioned in his papers after his assumption of duties in Washington, he felt a close attachment to his wife Anna and his two sons. Leo, a pathologist, died during World War II and left a wife and two children. Henry, a journalist, was later director of research for the AFL-CIO.97

Zon's fruitful life of public service in forest research and in the development of humane landuse policy ended on October 27, 1956. It could be said of Zon, as he had said of Gifford Pinchot, that he had "given much substance and direction to the struggle of a militant progressive democracy." Zon humbly stated: "I just happened to pass along when the 'Big Parade' of forestry began. I fell into the ranks and have marched with the column ever since."98 He truly grew up with American forestry and throughout his life had intimate contacts with those who made American forest and conservation history-men like Bernhard Fernow, Carl A. Schenck, Gifford Pinchot, William B. Greeley, Henry S. Graves, Earle H. Clapp, F. A. Silcox, Aldo Leopold, and Robert Marshall, to name only some of the most significant figures. Zon's technical research and publications "covered the waterfront" of forestry -forest economics, silviculture, forest influences, forest management, genetics, afforestation, reforestation, forestland development, and public land policy. Not only as a searcher for forest facts, but as a scientist attuned to the human responsibilities of his profession, this Russian expatriate of inquiring mind and high standards deserves to be remembered in the annals of the U. S. Forest Service and of American forest history.

⁹⁵Zon to Elers Koch, March 19, 1928, Box 5; Zon to H. H. Chapman, December 26, 1932, Box 7; Zon to Lovejoy, January 20, 1931, Lovejoy to Zon, May 19, 1931, and Zon to Lovejoy, May 25, 1931, all Box 6; Lovejoy to Zon, November 3, 1931, Clapp to Zon, January 10, 1933, and Zon to Clapp, January 14, 1933, all Box 7, all ZP.

⁹⁶Zon to Boisen, April 6, 1937, Box 9; Zon, undated preface for an unspecified book on silviculture, Box 1, both ZP.

⁹⁷Author's interview with Paul Rudolf, June 26, 1976; Richards, "Raphael Zon—The Man," p. 853; Zon, "Socrates and Plato in the Light of History," address presented to the Town and Gown Club of Minneapolis, October 26, 1943, Box 14, ZP.

⁹⁸Zon, "Public Good Comes First," American Forests 52 (November 1946): 544; Samuel T. Dana, "The Editor's Silver Jubilee," Journal of Forestry 24 (December 1926): 845.