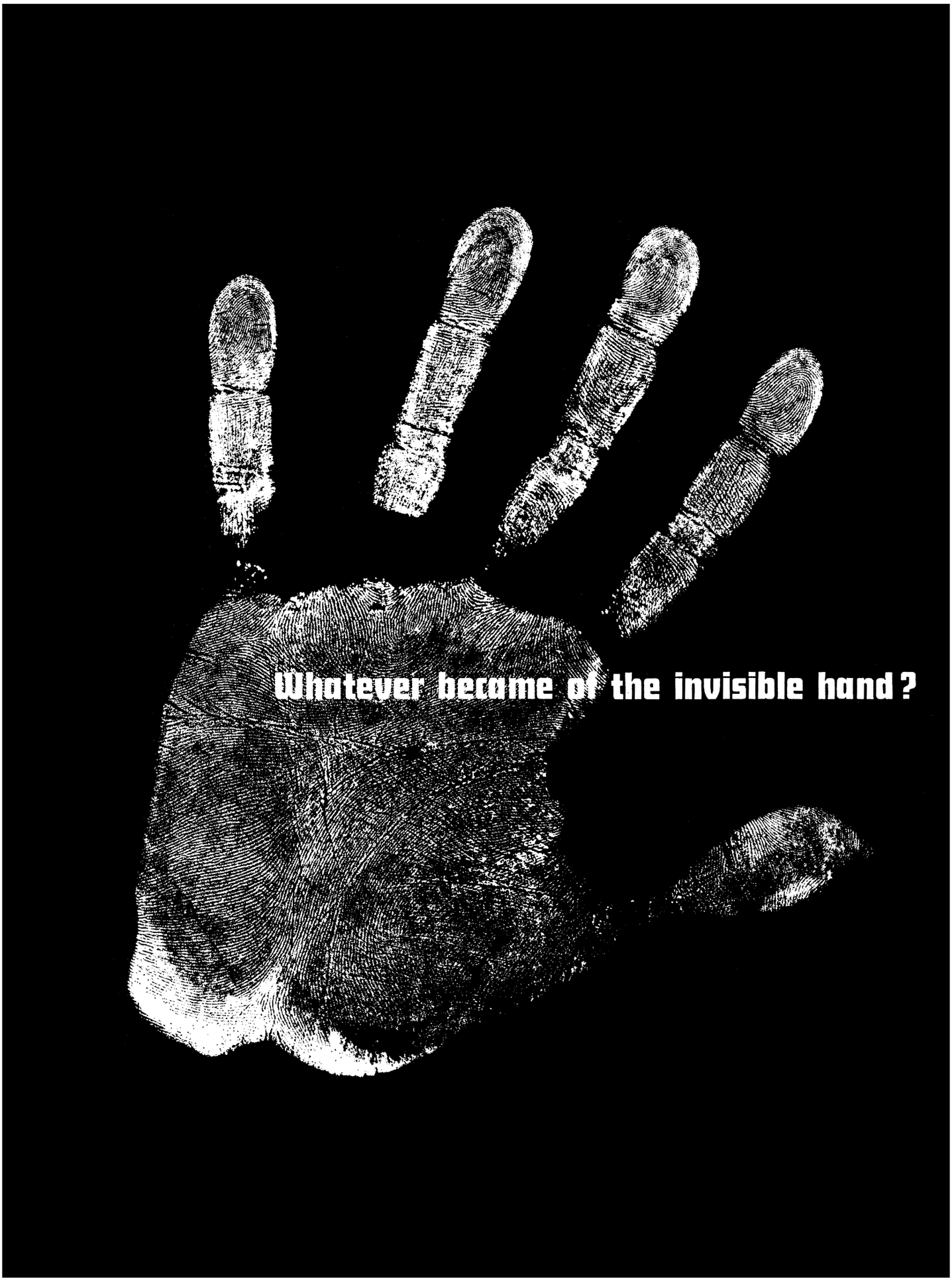

Whatever became of the invisible hand?

AS FORESTERS we are accustomed to the idea of long run biological experiments, but it is good to be reminded that we are now in the 192nd year of one of the greatest experiments in self government ever conducted. About two hundred years ago the people of this country were agitated by the shortcomings of the Colonial system. Men were meeting to discuss ways and means of correcting abuses, and some were already planning street demonstrations and riots as methods of protest. Eventually the establishment proved too unresponsive to withstand the strain.

Again, this year, our country is vibrant with discussions of the old problem of power, and how it should be employed—government, business, labor, police, minorities and special interest groups of all kinds are concerned with the effective use of power in a democratic society. We seem to be facing another period of tests to determine whether or not our current establishment is sufficiently flexible and innovative to advance new and more satisfactory solutions to the age old problem of living together in an urban society. What's more, we are firmly committed to continue this vital, long run experiment until the outcome is clear.

Under these circumstances, I believe it is relevant to ask, "Whatever became of the invisible hand?" What has become of that automatic and impartial force that was supposed to regulate the affairs of men engaged in the everyday business of earning their livings and building a good society? We foresters should be especially interested, for if the invisible hand has lost any of its skill we helped weaken it.

Ernest M. Gould, Jr.

Like so many other things the idea of the invisible hand started with Adam; in this case, Adam Smith. Smith's intellectual achievements as a moral philosopher made him one of the towering figures of 18th century England. He was also slightly eccentric; he talked to himself a good deal and was notably absent minded. Once while pondering some nice point of logic he fell to pacing up and down his garden and in his ensuing reverie walked fifteen miles from home before he became aware of his surroundings. The fact that he did this clad only in a dressing gown did not wholly escape the notice of his neighbors.

Nonetheless, Smith did have a great faculty for observing the world around him and for seeing, through the welter of confusing and contradictory surface details, that there was an underlying order. England was in the early phases of the Industrial Revolution, and Smith was able to construct a model of that economy which offered an insight more powerful than any previous into how men earned their livings and provisioned the economy. In fact, so great was the appeal of Smith's model that it is still firmly embedded in conventional wisdom; in practically any campaign speech given this past year, at least some of his ideas were to be heard.

What Smith saw was an England filled with thousands of consumers, an economic aggregate which constituted a society of infinitely varied wants. To satisfy these demands a multitude of producers vied with one another; each controlled only a small collection of resources, and all bought and sold in common markets where no single one had any appreciable influence. Many buyers and many sellers in combination with a free market created a mechanism that would serve society efficiently, as long as each person was guided by his own self-interest. Each producer tried to accumulate as much wealth as possible, but if he charged too much or offered shoddy goods his competitors stole away his customers; if he paid too low a wage he found himself without workers, if he paid too much he was without profit. In Smith's view the free market checked human avarice and greed, and channeled these powerful driving forces into producing goods of the sort and quantity demanded by the people at a price they were willing and able to pay.

The whole idea of the competitive free market economy had a beautiful sense and symmetry—rarely achieved by economists since—as well as an indisputably great advantage: it functioned automatically and the outcome seemed inevitable. No planning board was needed, no production schedule for the nation, no central decision-making by men who might act too timidly, too late, too extravagantly and always in too visible a way to escape attack. As Smith pointed out, in his view of society each man "intends only his own security, only his own gain. And he is led by an *invisible hand* to promote an end which was no part of his intention. By pursuing his own interest he frequently promotes that of society more effectively than when he really intends to promote it."

Smith first published his ideas in a book, *The Wealth of Nations,* which appeared in 1776. In it he established a tradition for constructing ingenious models of real-world activities; it has been followed by economists ever since. He showed, too, some sign of that imperfect foresight which has also plagued professionals—writing just before the Declaration of Independence he referred optimistically to the "late disturbances in the American Colonies." Apparently the outcome of a war has always been hard to predict.

Smith properly foresaw that the division of labor made possible by the liberal use of capital would vastly increase the wellbeing of society, as well as the population of the world. He did not, however, anticipate that securing the full gains of industrialization would mean large scale organization, a consequent reduction in the number of producing firms, and the eventual creation of administered rather than competitive markets to control much of the world's work.

Of course, many consequences of the competitive model were less than palatable. The free market was

a very strict task master and liberally meted out bankruptcy and starvation as punishment for nonconformity. It also dealt harshly, at least in the short run, with the so-called unprofitable poor, and promoted child labor as a social improvement. The competitive model also led to rather shortsighted management of natural resources– a drawback that foresters were to encounter much later.

This latter difficulty was not lost upon George Perkins Marsh who, nearly one hundred years later, published *Man and Nature,* the next fully articulated and influential set of ideas about resource management. Whereas Smith's orientation had been to man and his social institutions, Marsh was concerned primarily with nature and the impact of man on the natural environment. The subtitle of his book, "Physical Geography as Modified by Human Action," is a clue to his theme–man is one element in the natural world with a unique capacity to upset the intricate balance of the other systems surrounding him. And the effects Marsh envisioned were generally unfavorable in the long run. He anticipated by a hundred years our modern concern with the unintended, deleterious "spill over effects" which are now so common; and in his scheme of things the invisible hand apparently ignored how the "social costs" of correction should be paid or avoided.

How to compensate for the long run oversights of the market system remained on the agenda for public discussion without any wide agreement on solutions until the turn of the century, when a new model was successfully promoted by Gifford Pinchot as a means of guiding the use of forests for timber. In essence the idea was to secure a sustained yield of products by gearing the rate of wood consumption to the natural capability of the land for production. Postulating that society would need all the timber it could possibly get from intensively managed forests, various rules were proposed for finding the most efficient "rotation length" and for "regulating" each property to this schedule with all deliberate speed. Only then could a steady stream of products be made available for human consumption at the highest possible biological level. This general line of reasoning was later extended under the rubric "conservation" to water, grazing, wildlife, fisheries, outdoor recreation, agricultural soils and pure air.

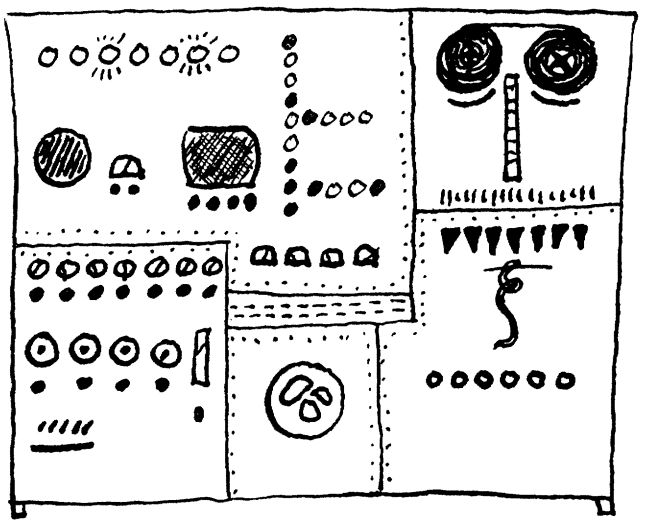
In this scheme the forester was cast as judge, to interpret the natural laws governing forest production, and as policeman, to enforce them. On the whole not a comfortable position–especially if nature happens to be niggardly, if uses compete for the same resources, or if economically literate owners have some measurable preference for present over future income–for a model of rational behavior based on biological control of timber production leads a manager to act differently than does one based on market control, and this has created frustrating confusion. Thus, if cutting is to be kept at a steady "sustained yield" or "allowable cut" level, what is the manager to do when prices fall, indicating that less timber is needed? "Ignore this signal from the market and continue cutting" is the answer, even though this may contribute to current glut and a further decline in price. And when the invisible hand posts higher prices in an attempt to get greater production, ignore that too, even though it makes supplies shorter and prices even higher. Strictly interpreted, the two models are not compatible because too often they lead to different operating rules for an individual forest or for the public domain. A good deal of time has been spent trying to rationalize the difference.

That we now realize biology is merely a constraint and not the sole guide to wisdom in managing renewable natural resources is relatively unimportant compared to the fact that in accepting the scheme foresters also decided it is wise and prudent to escape the invisible hand. Thus, they firmly "opted out" of the automatic and impersonal control of the free market and preferred to make choices tuned to other signals from their environment. We thus believe in the responsible exercise of individual power through planning that takes into account both short and long run consequences. Plans and planning have been a central tenet of forestry, and this implies that the power of choice exists in strategic locations throughout the economy.

For many years only Karl Marx took such a strong theoretical position on the need for planning, and his economic model seemed seriously unreal when considered in the context of the American scene. It wasn't until 160 years after *The Wealth of Nations,* and 72 years after *Man and Nature,* that Lord Maynard Keynes developed a model of the economy that assigned a central role to decision-making and planning in both the private and the public sectors. In Keynes's view of the 1936 situation there were no automatic controls in the economy which would insure satisfactory performance. Activity could as well stabilize at depression as at inflation levels, or at some intermediate point–it all depended on investment rates being large enough to absorb savings, thus preventing a blockage in the economic system on the one hand or overstimulation on the other.

In Keynes's view this balance of investment and saving was handled adequately by the private sector much of the time, but when an imbalance did occur public action was needed to redress the situation and prevent the economy from stagnating at an undesirable level. Regardless of the technique used for doing this (and there is plenty of argument about the best means), success obviously depends upon someone's making the proper decisions in a timely fashion, which requires organized foresight and, therefore, planning.

Most recently, Professor Galbraith has shown that planning permeates the industrial structure of our



technological society. In fact, he believes that without planning of a highly competent nature *The New Industrial State* could hardly function. Professor Galbraith suggests that the technique of planning has become more and more complex and dependent on melding information of so broad a scope that no single person can be privy to it all, and that, as a consequence, a very real and significant shift in power has taken place.

The "systems approach" solves problems by utililizing a team of subject matter specialists. The resulting group effort necessarily embodies an extensive series of piecemeal choices made by proceeding step by step from problem definition, to analysis, to synthesis. These choices are often so obscured and submerged in the final product that top level managers find themselves left with little remaining freedom of choice. Even executives who know that planning is essential to their success are finding that their power is somehow seeping away to the planning specialists. Thus the responsibility for critical decisions is being ever more widely diffused throughout the "technostructure" of planners in both the public and private sectors.

Not by intention, but by necessity and perhaps inadvertance, the invisible hand is being quietly replaced by a set of "invisible men" who are experts in the craft of decision-making by plan. It appears that all our current models of the economy and our views on managing the natural environment give a prominent place to such decision-making, and the older ideas of automatic human response to a kind of "deus ex machina" have gone by the board. This is all to the good, at least to the degree that it reinforces belief in using our peculiarly human skills of searching, learning, and adapting as a method of getting along in the world around us. But as our knowledge of that world becomes deeper, more intricate, and complex, the technical job of bringing it all to bear on any particular problem becomes such a formidable task that few are qualified to take part in the process.

This then is the dilemma of a society committed firmly to both technology and democracy. The number of people informed enough to make responsible choices in the complex situations grows ever smaller, while the number of people who want to take part in a meaningful way increases every day. Perhaps in the past we haven't been fully aware of this need to participate, but in light of the events of the past year there is no longer an excuse for not realizing its central importance.

We technical people—foresters, planners, managers—have been much preoccupied of late with utilizing the conceptual tools given us by the electronic age. It has been not only essential, but also fun to apply new capacities to our mammoth task of information storage, retrieval, analysis and synthesis. Now it is clear that most of the tedious work can indeed be done by machine, and there is no doubt that our new ability to handle information electronically will soon convert planning from the sporadic affair it has been in the past to a process that is practically continuous. We can have a new, long term plan for a forest served up with each of our meals for no greater than the cost of inviting a friend to dine. This is clearly the present trend of development.

Although the bright promise of technology may have helped turn our attention away from the central problem, participation, by now even the most secluded of us is aware that our future depends on how well we solve the problem of individual identification and partnership. As long time exponents of planning, foresters have a new design problem more important than any we have faced before: how can foresters plan for a future working in concert with men from Wall Street, Weyerhaeuser, Crown Zellerbach; with people from the Park Service, the Isaac Walton League, the Sierra Club, and the Appalachian Mountain Club; with citizens from Westchester County and Harlem, from Oak Park and Halsted Street, from Beverly Hills and Watts—all of whom have some interest and some responsibility? It's a tall order, true. But unless we can come up with a satisfying role for these people, we have—for all our technological virtuosity—little to gain, and less to give. □

Mr. Gould is forest economist at the Harvard Forest, Petersham, Massachusetts. He is the author of Fifty Years of Management at the Harvard Forest *(1960) and* Simulation—A Step Toward Better Forest Planning *(1965). Among his recent articles are "Forestry and the Urban Realm" (1966) and "The Future of Forests in Society" (1964), both of which appeared in* Forestry Chronicle. *This article is a minimally edited version of a paper originally given before the Division of Economics and Policy during the 1968 annual meeting of the Society of American Foresters in Philadelphia, Pennsylvania.*