## Distribution of Our Occupational Structure

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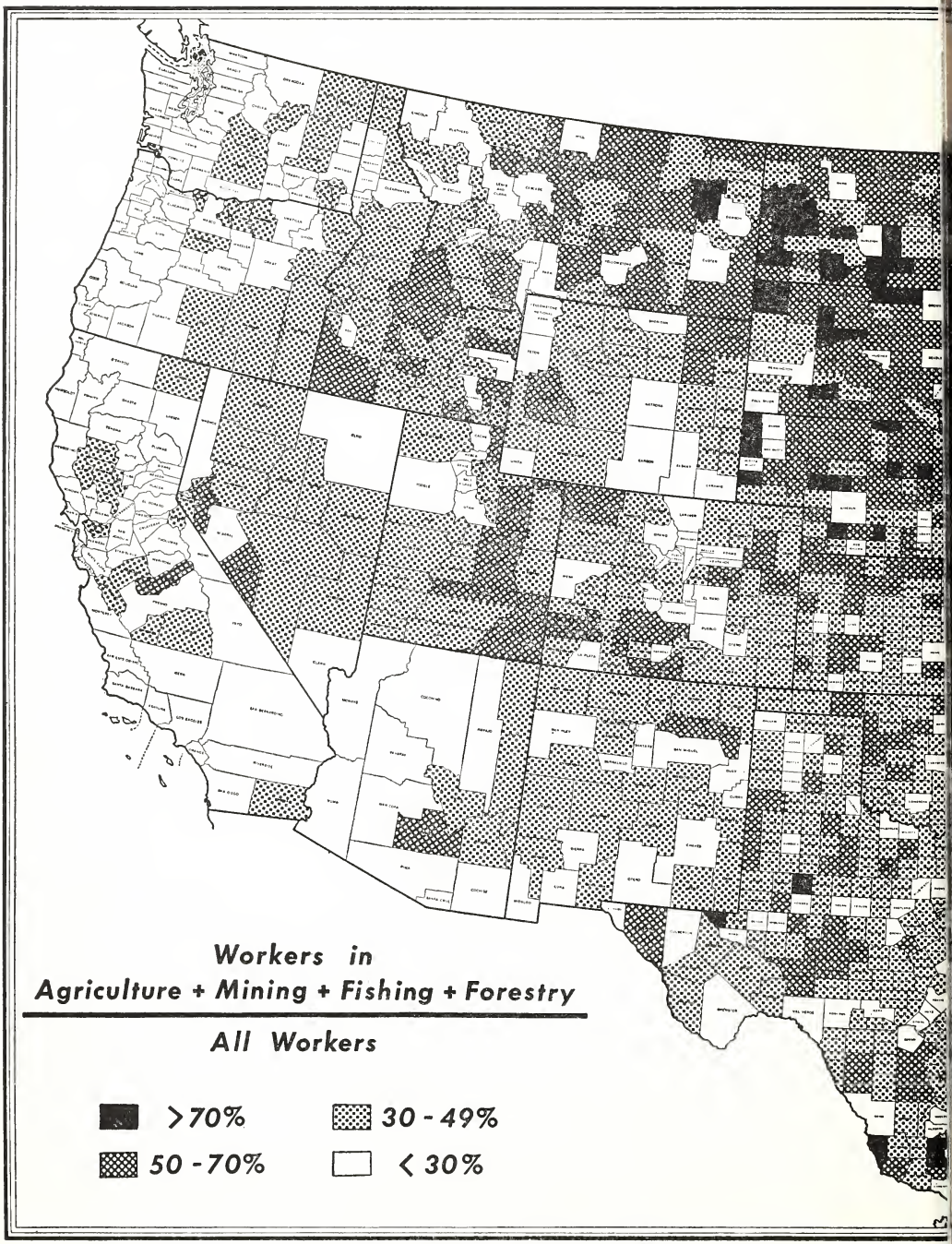
This paper is based upon an original map which portrays the distribution of the occupational structure of the United States by counties, as of 1950, by means of data from the United States Census.

For each county is shown the percentage ratio of the sum of the county's workers employed in agriculture, fishing, forestry, and mining to the sum of the county's workers. Thus in effect the ratio is $\frac{\text{workers producing raw stuff}}{\text{all workers}}$, and thereby are emphasized the degree of earthliness of the counties and concomitantly the degree of their quasi-divorce or quasi-separation from Mother Earth. In an important sense the workers associated closely with Mother Earth, since they gather and produce, are primary, basal, ground-floor, "grass-root;" likewise the workers associated loosely with Her, since they modify raw materials, are secondary, supral, upper-floor, "non-grassroot." In the map the darker shades are strongly "grass-root," and the lighter shades are weakly "grass-root" (i.e., strongly industrial-commercial-business-transportational-professional-financial-governmental-servicing). The primary and the secondary workers are symbiotic.

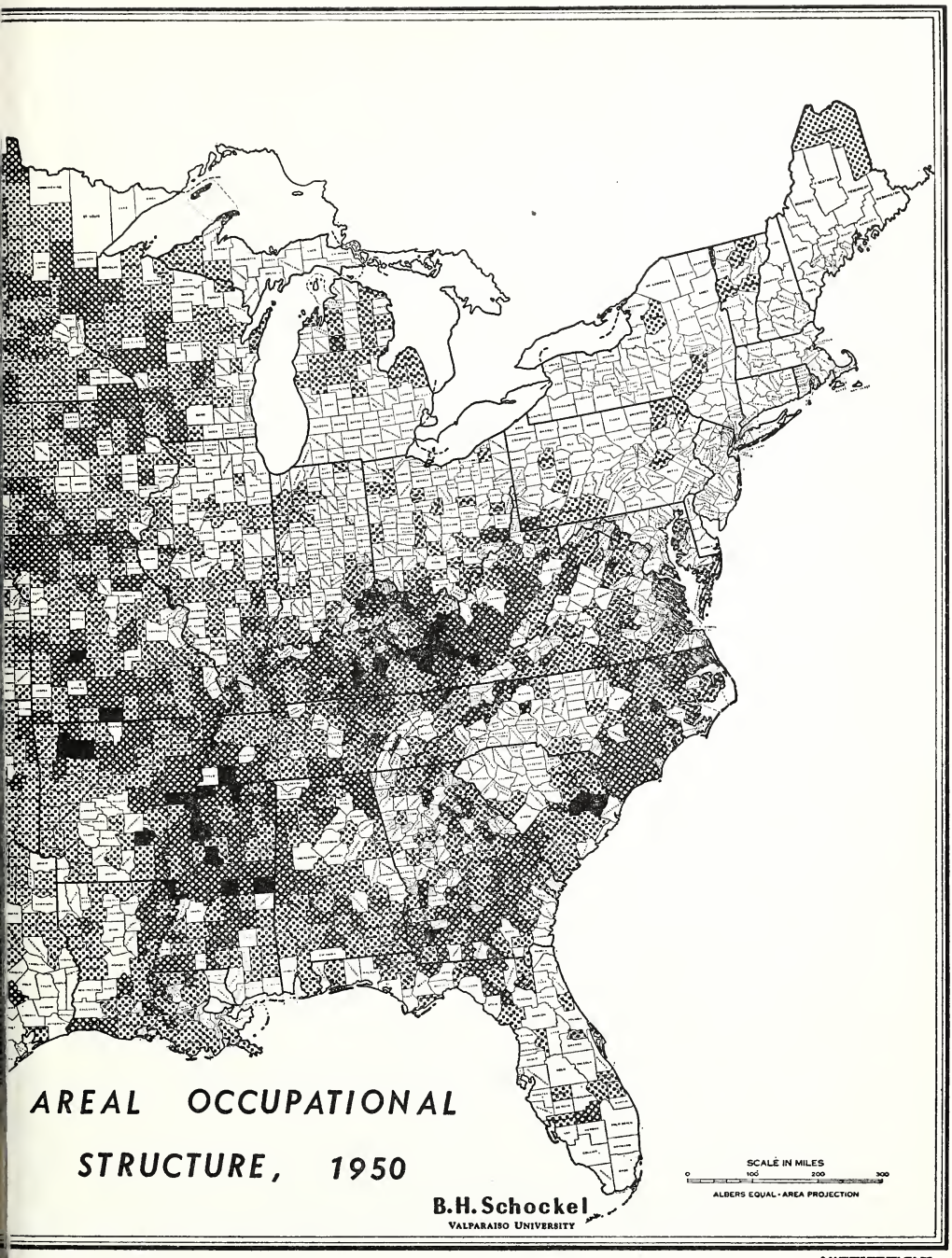
A generalization is that few of our counties are now predominantly "grass-root," although we produce increasingly vast quantities of raw materials, whereas in 1790 we were tied occupationally very close to our land and water. Moreover, the degree of this quasi-divorce is increasing while the degree of this productiveness of raw materials is also increasing. The bonds of our marriage with Nature are loosening occupationwise, but the state of marriage productionwise was never more real. One and one-half centuries ago our occupational structure pattern in diagram form was that of a pyramid the base of which was "grass-rooters." Today the pattern diagram is that of an inverted, truncated pyramid balanced upon a narrow base of "grass-rooters," who comprise only about fifteen percent of our workers, but who produce increasingly abundantly. Overall we rush to diversify.

There is striking areal differentiation in our spatial occupational structure pattern. In a horseshoe area embracing loosely the Southern Appalachians, there is a strong interest in a concentration upon the production of raw materials. This area extends from one of its heel-points in West Virginia westward to its toe in Arkansas, and thence eastward to its other heel-point in North Carolina. A second "grass-roots" area occupies part of our Northwest Interior. It borders on Canada and is marginated southerly by a line from northwest Montana to northern Nebraska to the vicinity of Duluth. Finally there is a perforated lens area extending from central Wisconsin to northeast Kansas.

With little exception, the remainder of our country has become predominantly "non-grassroots" in occupation. Outstanding quasi-




County boundaries as of April 1, 1950


AREAL OCCUPATIONAL
STRUCTURE, 1950
B.H. Schockel
VALPARAISO UNIVERSITY
SCALE IN MILES
0
100
200
300
ALBERS EQUAL-AREA PROJECTION

divorced areas are: an area extending northeast from St. Louis to easternmost Maine; our Pacific Coast area; our Appalachian Southeast; and Florida. There are no "grass-roots" counties in all of New England, none along our entire Pacific Coast, and none in New York, New Jersey, Delaware, Maryland, Washington, and Oregon. There is only one such county in each of the following states: Pennsylvania, Indiana, Michigan, New Mexico, Arizona, and California.

I consider that this map portraying the spatial distribution of our occupational pattern is a fairly adequate tool. It is a necessary job, and no simple job to portray facts spatially, concomitantly, and in symbiosis. Having done so in the map before you, I might stop right here with considerable dignity.

But at least three other steps remain, to wit: (I) explanation of the so-called causes of the remarkable spatial pattern; (II) analysis of the implications or significance of the pattern; and (III) my reactions to the realities revealed by the pattern, that is to say, application, that is to say, "What are we to do about the set-up?"

In order to get at step number I, consider that some of the so-called causes for the spatial pattern hide in the following items: (1) growth in population, urbanization, mass production, mechanization, automation, subsidies, national defense, governmentism, economic organization, migration, and the like; (2) the natural environment, history, and nature of the peoples; (3) the transformation and migration of the peoples and the industries; and (4) new uses, and quasi-exhaustion of some of the natural resources.

Having listed these items one could proceed to analyze the so-called causes hiding in these items, and thereby produce in step I a book, namely Volume I. Today, however, in Volume I, I confine myself to two topics, namely the relative decline in the numbers of "grass-rooters," and the relative rise in the number of "non-grassrooters." Only a few remarks and tentative generalization will be made.

Almost everywhere in the United States there has been a relative decline in the number of "grass-rooters" partly because their productivity per workers has grown astonishingly. In many aspects of agriculture, mining, and even in fishing, a surplus of production has become a handicap. Despite subsidy and partly because of it, especially in agriculture and mining, the marginal producers are turning to other occupations, partly through choice and partly through compulsion.

Let us for the moment consider agriculture. Our bona fide farms are growing larger and fewer. Since 1920, the average size of the farm has risen from about 150 acres to about 225 acres (a rise of 50 percent) whereas the number of farms has dropped from 615 million to 5.2 million (a drop of 20 percent). There was a decrease of 21.6 percent in farm population. Only about 12 percent of our workers are in agriculture. We have less than 3.7 million commercial farms. Incidentally, many so-called farms are no longer bona fide farms, and their occupants have been rather curiously censussed as "non-rural." Recall this astonishing set of facts: First, a group of farmers of giant farms, less than 2 percent of all our farmers, receive altogether about 25 percent of the entire

parity-price subsidy provided by your taxes. Second, another group, big farmers, less than 8 percent of all farmers, receive altogether another 25 percent of all parity-price subsidy. Whereas a group of little farmers, about 91 percent of all farmers, receive altogether no more than 50 percent of all parity-price subsidy. The subsidy is split "fifty-fifty:" one-half to one-tenth, and one-half to nine-tenths. Now giant and big farms, increasing in size and numbers, do well in only certain portions of our country. This helps to explain the distribution of "grass-rootedness." Here is another remark: In farming a mighty factor in this transformation in spatial aspects of occupation has been the tractor used as a tool in mechanization. Consider, for example, the single item of the changed impact of land needed for draft animals, especially horses and mules. More than 25 million acres of crop land and more than 12 million acres of pasture land have been released from the production of feed for draft animals to other uses. Gone also are the daily chores and sometime joys of taking care of the animals. Consider now the United States as a whole. From 1939 to 1954 the number of farm workers declined from 11.5 million to 8.5 million (a decline of 26 percent), yet the productivity output of the acreage has increased 47 percent.

I can now state an agricultural generalization which is more or less true and which helps to explain our spatial occupational pattern, namely: With small exception, agricultural occupational space where it is still undislodged by other factors has held its own best where topographic, climatic, and drainage conditions have made difficult the impact of the modern sweep toward large production per worker. This is most obvious in the horseshoe-shaped area where the roughness of topography provides an element of resistance to innovations and to the inroad of other pursuits. To a lesser degree the spatial pattern also reflects such resistance, abetted by climate, in the colder portion of the dairying areas. In addition witness the resistance offered by the nature of the production inherent in tobacco and horticultural crops.

Now let us consider mining. In mining also, the production per worker has increased greatly, with a resultant relative decline in the marginal areas. Coal now provides less than one-half of our mechanical energy largely because at present more energy per worker is garnered from our petroleum and oil pools than from our coal. This is the case despite the fact that mining of coal per worker has increased greatly through mechanized tools, machinery, and even through automatized machinery, and by the powdering of coal in the mine to be piped to the surface. To a degree it is true that our coal mining is a sick industry, and we witness the fading of coal mining where the production per man is low, in favor of coal mines where the production per man is high. Don't forget that exploratory drilling of gas and oil wells is subsidized at even higher rates than is agriculture.

The effect of the presence of minerals in the natural environment is discernible in the northern limb of the horseshoe area, but overall there is not much direct relation between the distribution of minerals and the distribution of the spatial occupational pattern, since miners are so few.

I can now pose a second generalization as a hypothesis in the form of a question. Is it true that where it is still undislodged, mining occupational space has remained prominent in the occupational pattern in those areas where mining production per worker has remained low (partly owing to the retarding effect of natural conditions and of labor conditions)? If so, this is a second item which helps to explain the persistence of the horseshoe. Is the horseshoe area a fortress of the basals? Or is it merely that the suprals do not find the horseshoe very attractive?

The weakening of "grass-rootism" is obvious in those places where virgin forests, virgin fisheries, and virgin mines have largely been exhausted, as for example in the famous Driftless Area of the Upper Mississippi.

Let us now turn to my second topic, namely the impact of the relative rise of the "non-grassrooters" upon the spatial occupational pattern of the United States. This would be Part 2 of Volume I, and what a huge Part 2 the rise of the secondaries would be! For the rise of the "non-grassrooters" is the main key in the explanation of the map. Greatly relieved and released by the pronounced output success of our "grass-rooters," how the rest of us have grown, subsidized by tariffs, social security, and other inducements, stimulated by mechanization, automation, and other fringe benefits, and by many other items.

There are more businessmen than there are basals; even more factoryworkers than basals; there are more clerks than farmers; soon there will be more transporters than farmers. For the sake of brevity, let us pause with the clerks.

There are nearly 9 million clerks who produce marks on pieces of paper. The spatial distribution of these clerks helps to explain the map portraying spatial distribution of occupations integrated in symbiosis.

It is an important fact that our clerks turn out relatively little work per worker. The clerical work is a bit mechanized, but it is not yet automatized, although that is in the offing. When this happens there will be a change in the spatial pattern of our map; paperettes will flutter over us like snowfall. There will be an increased centralization in the reorganization of our business world.

These thoughts lead toward another alleged generalization posed as a question because it may not be true, namely: Do the shadings on the map tend to be lighter in those crowded areas where the "non-grassrooters" turn out relatively small product per worker and the workers are many?

Here is another observation. It seems natural to find many secondaries along our coasts. Many transporters tend to lodge there; also many wholesalers; and also many manufacturers lured by the materials flowing in and out. People migrating in and out tend to lodge there.

Consider now migration. Our quasi-retired people trend toward Florida, our Southwest, also toward California and even Oregon and Washington, lured in part by climate. Many of them do some work, but few of them do primary work.

The preceding items are random samples of what should go into Part 2 of Volume I. Let us turn to Volume II, namely implications inherent in the map of spatial occupational pattern.

A basic implication is that occupational life in the United States is complex, is growing more complex, is in an increasing flux. Each increase in productivity per worker releases workers and forces workers into new regions, often into new occupations. There is expanding complexity. Occupationally we are moving changelings, in motion between points. Yet there is a pattern, a spatial pattern.

Another implication is that occupationally we are largely producers of surplusage. Hence we need to sell to other lands. But, unlike England and Western Europe, we have overall more to sell than we need to buy. This creates an unbalance. Yet we employ tariff, etc., to reduce our buying. We have found that there are hazards in giving. We are in danger.

There is danger in tenuous remoteness from Mother Nature. Our inverted occupational pyramid might prove unstable in the face of vast catastrophe.

Again, in our great production per worker lies hidden some impairment of our physical base, our natural endowment. There is also danger in becoming human ants, or human bees.

It is clear that Volume II would be a fat volume also. Hence let us hasten to Volume III, which in effect deals with "What to do about it all?"

In Volume III your guess is as good as mine, and perhaps as good as that of the Planners. Yet plan we must, to some extent, and to some degree, somehow. We must think and dream, and arrive at some good recommendations.