

AGRICULTURE-GEOGRAPHY

Geography and the Farm Problem

By **DR. ISAIAH BOWMAN**,
Director, American Geographical Society

THE NEW administration at Washington has one overshadowing responsibility, to improve the lot of the farmer. One of our greatest difficulties is over-production. Many farmers are obliged to sell their grain crops at prices far below cost. The cause is in part a geographical question; to find a cure we are required to take account of the geography of the West particularly.

There is no more inspiring process in our history than the westward spread of people over our central Great Plains and to the Pacific. In the 90's the sweep of settlement was slowed down but it was not stopped. Even today in parts of the High Plains of western Kansas and Nebraska and eastern Colorado and Montana, virgin grassland is being plowed for wheat. I saw the advance of the plow in Colorado and Kansas as late as the summer of 1932 and much more of it in 1930.

Even the low price of wheat has not yet prevented new plowing. Droughts only temporarily halt it. The reason is that western wheat farmers have learned a trick—how to put big machines on cheap land and by "dry-farming" raise crops that can be sold at a profit. This was true even in the discouraging markets of 1930 and 1931 when the price dropped to 60 cents a bushel. At 30 cents and less all calculations went wrong and commercial wheat farming fell into a state of paralysis.

The wheat lands on the drier western border of the plains country are among the marginal lands of agriculture and in

their "continuing wise use" geography becomes an adjunct of statesmanship. No government can frame a long-range policy of real value unless account be taken of the peculiar geographical qualities of the marginal lands. I have called them pioneer lands because a pioneer is an experimenter and in the marginal lands experimentation is the first law of survival.

It was by experimentation that dry-farming was learned and the edge of the wheat belt pushed forward over the High Plains of Texas and carried west of central Kansas and Nebraska for at least 500 miles. It opened central Washington and northern Oregon and scattered wheat fields through a half dozen western states where only cattle ranges were known before. The use of more drought-resistant breeds of wheat helped the process vastly.

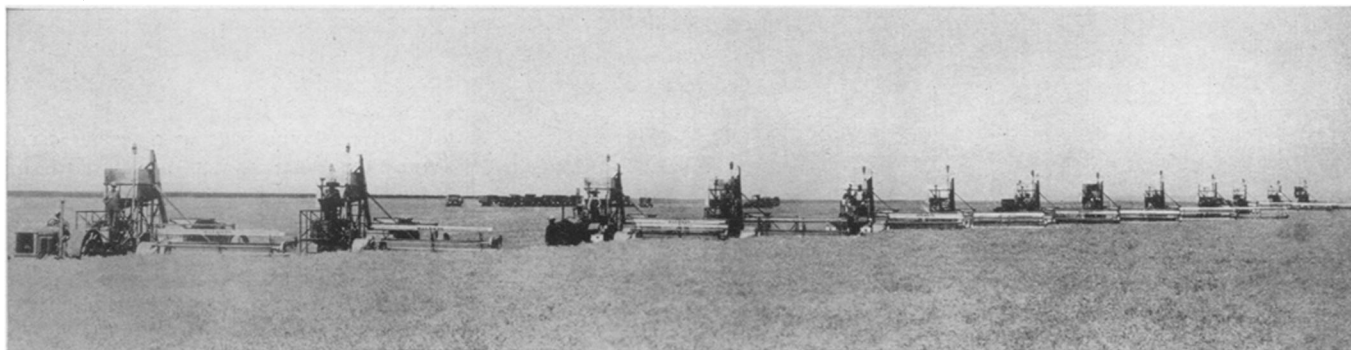
All of Us Experimenters

To some degree all of us everywhere are experimenters. New conditions face us daily. Galsworthy has reminded us "that the status quo is of all things the most liable to depart; the millenium of all things the least likely to arrive." But experimentation in the marginal lands is carried much farther than elsewhere. We of the better-favored regions have to adjust our minds to the fact, otherwise we miss the significance of the agricultural disease that is now epidemic in the United States, particularly in the West. At the root of that experimentation is climate. Nature takes a hand in the western wheat-growing lands and adds to the farmer's burden, withering his crop by drought and sun or beating it down by hail. The recent Red Cross

report on the drought of 1930 and 1931 describes it as a "major disaster" to which was added in parts of South Dakota and Nebraska the most destructive grasshopper plague in the history of those two states.

Our rainfall in the East may vary by several inches or many inches from year to year and we complain perhaps that the season has been too dry or too wet, when we are really very little inconvenienced by the change. How differently we should feel if our rainfall were 22 inches one year and but 7 the next! In such a locality there is moisture enough to permit a heavy crop one year and so little the next year as to result in complete failure. There would be no crop at all if wet and dry years came in a wholly irregular fashion because no one would risk seed and labor.

It happens, however, that both wet and dry years commonly come in groups. This means that grain and hay can be stored for use in bad years or reserves of cash built up to buy feed for live stock or to hire additional pasture. Even this would not be sufficient to enable the marginal farmer to survive if it were not for the fact that as a rule he has bought his land cheap or homesteaded it at little cost except for the "improvements" required by law. It is also in his favor that the taxes are relatively low because most marginal-land counties are new and thinly settled, with no large cities; and schools and other expensive machinery of civilization have not yet been developed to a state of burdensome luxury. Assessed at first as grazing land, some of the marginal wheat land is only beginning to rise in value and the tax gatherer has



MASS PRODUCTION IN AGRICULTURE

U. S. Department of Agriculture

Thirteen combines harvesting on a 6,500-acre wheat ranch near Adrian, Texas. When wheat sells for only 60 cents a bushel, dry-farming with big machines will raise it profitably on cheap lands.

not yet fully caught up with the pioneer.

The droughts and low wheat yield on dry land do not drive out the farmer for he knows that wet years will come again and in the meantime he enjoys a relatively low tax rate. But the whole system was worked out, largely during the period just before and just after the World War, when wheat was still commanding a good price. When both wheat and cattle dropped in price, not to half but to a third or a quarter of the prices that prevailed in the dry-farming boom, the marginal farmer had to face both the exceptional risks of climate and a demoralized market. If he owed money for improvements or for additional land or for live stock and seed, he was caught between two fires. In one such county four-fifths of all the families (4500 in number) in an area as large as the state of Connecticut have appealed for Red Cross aid.

Land Classified

Science does not stand still in the face of such a desperate situation. It is not sufficient to feed people in distress; it is the business of the government to find a cure based on sound scientific work. The Conservation Board of the U. S. Geological Survey has been at work for a number of years on the classification of the land in a broad strip east of the Rockies and running all the way from the Canadian boundary south to the panhandle of western Oklahoma. The results are shown upon a most valuable series of maps. Similar maps are now in preparation for the Great Basin covering a territory of equal extent. These maps may be called "risk maps." They show what degree of risk is involved in the use of the land as one goes from the belt of good soils and more reliable rainfall to the belt of poor soils and quite unreliable rainfall.

Were these maps followed they would vastly decrease the risks and the suffering now so prevalent in the region. But the dry-land farmer is an inveterate gambler. Again and again farmers have paid their debts and saved up cash in years of rainfall and plenty in areas marked on the land-classification maps as very risky. It has not been feasible and possibly not even desirable hitherto to say to a farmer "You shall not farm on a given territory because we believe you will fail."

The use of the marginal lands has greatly increased the wheat output of

the country and helped lower the price of wheat. They now represent areas of extreme distress. What is the policy to be followed in using them more intelligently? Here science can not complete the story. To say what shall be done with the marginal lands of either Kansas or New York State is a social and political question in part. It involves the standard of living of the marginal

farmer and the policy to be followed in forcibly limiting production or changing the use of the land by law. Science leaves that to policy makers, assigning only to itself as science the duty of analyzing the situation, mapping the belts and the degrees of risk, and explaining how communities are related to the land and to each other.

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GEOLOGY

Earth's Many Depressions Were Blessings in Disguise

IF IT IS any consolation to present sufferers from depression, mental or financial, having depressions and, what is more important just now, getting out of them are just beneficial incidents in the life of Old Mother Earth. Rough on some of the actors that strut upon the earth, the earlier depressions nevertheless, from the long time view, are beneficial.

Viewing the flux and flow of "good" and "bad" times from the standpoint of geological eras rather than the few years of our generation, Dr. Carey Croneis of the University of Chicago gives perspective to the current questioning of stability of civilization.

"The earth has enjoyed countless depressions, the most wide-spread of these, paradoxically enough, being at times of great mountain building," Dr. Croneis writes in *Scientific Monthly*. "And although some of the results have been so far-reaching that all life has seemed to have been blotted out, a few of the simple, sturdy stocks in actuality have always weathered the storm to build new and more glamorous family careers during the following period of inevitable world recovery. And for today's timid soul the most encouraging feature is this—the new forms of life have always been more advanced than those whose places depressions made vacant.

Hard Times are Good Times

"The parables from out of the past are clear: All hard times are really good times. Fortunes, families, mountain ranges and even continents rise out of depressions; all hard times are inevitably followed by good times, which, in effect, are bad times, inasmuch as in

them family fortunes, individual initiative, national ideals and even lofty mountains are so weakened or reduced that they are likely to be completely destroyed or at least radically altered by the time the next depression is well under way."

Riverside Drive, Michigan Boulevard, Unter den Linden, the Strand and Champs Elysée have all been beneath the ocean that has flooded what is now land scores of times. Great Britain is sinking at a rate which is sufficiently rapid to effect nearly complete submergence within the next 40,000 years.

Depression Killed Dinosaurs

Consider the really great "depression" at the close of the Mesozoic, that age of dinosaurs, when the reptiles, like Russian royalists, were nearly blotted out, never again to become dominant. Dr. Croneis reminds us that "the roots of the great modern spreading tree of mammalian types were firmly anchored in the very depression which was too drastic for the optimistic dinosaurs who, to the final crash, continued bullish on Brawn Not Brains, Inc."

Do these examples from the past convince? Dr. Croneis laments:

"Whether ancient, medieval or modern, — the historians, philosophers, courtesans, priests, soldiers, medicine-men, artists, pugilists, college presidents, tycoons, economists and politicians have all agreed that the history of the past is the prophecy of the future, but they have never failed to reconcile themselves to the thought that they, their affairs and their times are somehow exceptions."

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