

Dynamic Factors Affecting Agricultural Economy



PROCEEDINGS

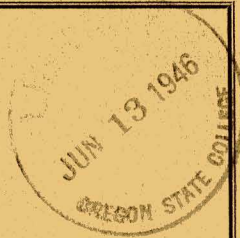
MARKETING *and* DISTRIBUTION
CONFERENCE

January 1946

OREGON STATE COLLEGE & CORVALLIS

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
WM. A. SCHOENFELD, DIRECTOR
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CONFERENCE PROGRAM

January 16

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Dean and Director of Agriculture, Oregon State College

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FOREWORD

Oregon agriculture suffered a severe setback after World War I. We were not fully aware of the powerful economic and social forces unbridled by modern warfare; therefore we were unprepared to cope with postwar problems. The economic collapse came in 1921, and it continued in agriculture for some time. In 1924 the College sponsored its first Economic Conference of agricultural, industrial, and financial leaders. From this Conference came several recommendations that helped to guide our agricultural economy through many trying years.

Today we meet in an era of transition from an economy of another war to an economy of another peace. The fighting is over. The peace we seek has not been won. It will not be won until we have effected the transition that must follow after years of physical conflict among nations.

World War II has shaken our social and economic institutions to their roots. Science has come into its own. It is now exerting tremendous pressure toward change. In fact, the people of the world have been unable to adjust themselves to their environment at the same rate at which science is causing changes in technology. This inability of man readily to adjust himself to new things forms the basis for many of our problems in agriculture, industry, and finance. It also gives rise to frictions between racial and economic groups.

None of us understands the full impact of all of the forces affecting our lives. But as leaders it is our responsibility to seek to understand and evaluate these forces. It, therefore, is timely that this group of representative Oregon citizens should meet together in January 1946 to give consideration to the basic forces affecting the agricultural welfare. It is my hope that this Conference will help prepare us to meet them.



A. L. Strand
President

OBJECTIVES OF THE CONFERENCE

Wm. A. Schoenfeld, Dean and Director of Agriculture
Oregon State College

It is especially pleasing to me to have the privilege of greeting the members of this conference. Many of you have come a considerable distance to participate in and derive therefrom the benefits of an organized and systematic discussion of current economic problems.

This conference on Marketing and Distribution is another one of the many activities carried on by the Oregon State College to fulfill its responsibility to the people of Oregon in the fields of research and teaching. The speakers who will appear before this assembly and the discussions that will form an integral part of the program will be concerned with the impact of the war on the economic and social life of our citizenry.

The stresses of war have forced fundamental adjustments in our ways of life. The basic forces that exerted pressure during the war and are still exerting pressure on established ways of life are many. Some of the pressures are permanent; others are temporary. In some instances the war pressures have merely accelerated the rate at which change is transpiring. The application of the results of scientific research to agricultural production reached its peak during World War II. Because of these new techniques agricultural production was increased by at least thirty-five percent above any previous level. We, therefore, have entered the postwar years with a capacity to produce farm products far in excess of our past ability to find suitable markets. Industrial capacity has been built up during the war at a much greater rate than has agricultural capacity. These conditions create problems, the solution of which will require the most thoughtful attention of our leaders in agriculture, labor, industry, trade, finance and government.

It is the purpose of the College in bringing together this group of leaders in their respective fields to make available to the public the best possible current thinking on the issues facing us during the next few years. My hope is that we can attain a measure of success in identifying the economic forces that are likely to become problems to the producers in agriculture and industry. We will need to examine all facts pertaining to forces affecting our welfare; to consider the immediate and long-run pattern that may characterize the forces in operation; to seek to establish the basic causes underlying economic disturbances; and, finally, to present the most reasonable approach to a solution of problems facing us.

Since agricultural activity accounts for a very substantial part of the annual income of the people of Oregon, and since no other segment of our economy is more sensitive to maladjustments in industry, trade, and finance than is agriculture, the Agricultural Extension Service has chosen to sponsor this Conference. Through an analysis of the immediate

issues; the implications of specific issues, and the interrelationships of one economic problem to another; and a discussion of the impact of forces upon the several segments of our society, we hope to fulfill our function as an educational institution.

The Conference program committee has sought to bring before this group several outstanding speakers to discuss some of the more important forces causing change, as well as the changes and the implications of the economic changes transpiring. I believe that you will agree with me after examining the program that the committee has planned well. But it is now time to see the committee's plans begin to unfold.

Dr. A. L. Strand, President of the College, has been selected for the opening lecture. It is his task to direct the destinies of the Oregon State College into channels that have an immediate and long-run interest to the people of Oregon. It, therefore, is a pleasure to present Dr. Strand, who will discuss the subject "We Face the Future."

WE FACE THE FUTURE

Dr. A. L. Strand, President
Oregon State College

If I have any qualifications for occupying this spot on the program, which I doubted many times during my efforts to prepare this paper, it is because I know something about agricultural depressions, having been rather closely associated with two or three of them. The fact is, if you will pardon a personal reference, that the cotton boll weevil and I arrived in Victoria County, Texas, at one and the same time, the boll weevil coming by way of Old Mexico, and I by way of the proverbial stork. Nobody noticed this important coincidence at the time. It wasn't until I was grown and had begun the study of entomology that I really began to see what had happened, but of course I had heard lots of talk by older people about boll weevils a good many years before I knew there was such a word as entomology. My family was part of the big migration to the coastal region of Texas that took place a few years after the Civil War and located on a quarter section of Guadalupe River soil. Apparently they got along all right until I and the boll weevil arrived and then things began to get pretty tough. We weren't the only factors, I should say, for everyone knows there were several economic forces at work in the last few years before the turn of the century. (Whatever they all were, we were just as bad off as if we had been supplied with economic experts to describe our condition.) The weevil did not counteract, as it should have, but was complementary to the general deflation of prices, in those early years of its invasion taking as much as seventy-five percent of the cotton crop. The other crops raised were mostly for feed so there was very little cash income. It was pretty much a case of four-cent cotton and no cotton. It was these conditions right there where my family lived that gave rise to one of the major farm organizations that we have today. But my father never joined that

organization, for about a year before it got under way he sold out and took his family to Montana.

All of my memories of Texas are very pleasant—gathering wild pecans along the river, "black snake" watermelons, long camping and fishing trips to the gulf which was only twenty-eight miles away. Any realization of the hardships of the time must have come years later. I don't remember any bitterness that came out of that depression and I think that is rather characteristic in general of farm people. In 1919, a very memorable year in the agricultural history of the northern Great Plains, I went back to work for the Montana Experiment Station, just in time to observe the beginnings of another long and severe depression. In July of that year I walked between Inverness and Rudyard, two new towns on the Great Northern Railway in northern Montana. A more desolate sight would be hard to imagine. What wheat plants had been overlooked by the pale western cutworm had long since dried up and been blown away by the scorching winds. There wasn't even any Russian thistle; the only sign of life was the activity of the western horned lark which was engaged in digging out the fat worms which remained beneath the crusted surface of the soil. I stopped at a farm house for lunch and found the family laughing over some verses they had just composed about the drouth. "The clouds look wet but pass us by," was one line I remember. The war was over, the boys were coming home, nearly everyone had a new Overland, and crops would be good again. Hadn't Jim Hill promised them in a notable speech at Billings just a few years before that no one would ever see wheat selling again below a dollar?

The winter of 1919-20 put more bones to whiten along the fence rows and in the gullies and swales of that whole country than the more advertised winter of 1886. Train loads of them were an important part of railway tonnage for several succeeding years. The worst of it was that the poor critters, of which those bones were the last visible remains, before they toppled over, had already eaten thousands of tons of forty-dollar hay shipped in from Mississippi Valley States. I've heard many a rancher, recounting the experiences of that winter, confess that he wished he'd bought bullets instead of hay.

The next year, 1920, a fair crop was produced. Wheat was a dollar and a quarter but very little was sold at that price. The growers were holding out for at least a dollar and a half, maybe two dollars. But then, in spite of any ghostly objection on the part of the great "Empire Builder," the bottom dropped out of the wheat market. It was part of a great liquidation of human and material resources that had begun. And it lasted with little interruption for a long time.

To me at least, in sort of explaining my presence up here, it seems worthwhile reviewing these events. For better or for worse, the happenings in those years on the wind-swept plains of Montana were more important than anybody could have imagined. They deeply affected the thought processes of several men who later became very prominent in the development of an agricultural policy for the entire country. (Incidentally, it might be a good thing to record here in Oregon, they were all Republicans.) One of them was M. L. Wilson, now the national director

of Agricultural Extension. Up to 1920 he was a county agent and county agent leader, trying to move eastern Montana into the corn belt, a rather fruitless proposition. If he was interested in anything more than that, it was in collecting Indian lore and relics, of which Montana had a goodly supply. But the early 20's made an agricultural philosopher and economist out of him, mostly philosopher I would say. About this time Wilson began spending considerable time, off and on, at the University of Chicago, and it was during this period too that he borrowed some hundred thousand dollars from Mrs. Rockefeller to start his Fairway Farms project. I have the word of Henry C. Taylor and Wilson himself that the farms produced more ideas than they did crops. Now if you want to take the trouble to look up the whereabouts about that time of one Beardsley Ruml, the big idea man of America and lately credited with originating the New Deal Agricultural Program, you will find that from 1922 to 1929 he was director of the Laura Spellman Rockefeller Memorial and then up to 1933 was a professor of sociology and education at the University of Chicago. It isn't hard to put two and two together. What did the man later to be the treasurer of Macy's, now the chairman of the New York Federal Reserve Bank, know about western agriculture? The answer is probably nothing although he was born in Cedar Rapids, Iowa. But when he sat, he sat fat and comfortable and he had a very fertile mind when it came to playing with ideas that might be fed to him. (Yesterday, maybe I should remind you, was income tax day and the Ruml pay-as-you-go plan is quite a boon to all of us.) If the connection between Wilson and Ruml was not direct, it was through Edward A. Duddy, another Montanan and long-time professor of agricultural economics at Chicago. Wilson became the first director of the wheat program under AAA, but being an idea man rather than an administrator, he didn't last long at that and was soon shifted to Assistant Secretary and later Under Secretary.

Another name you will recognize is that of Chester C. Davis. When I first knew Davis in Montana he was running a small weekly Republican newspaper. Then he moved to become editor of the Montana Farmer. In the early 20's he was state commissioner of agriculture. Davis was a lot different from Wilson. He was an executive, a business man who had made agriculture his cause. He was soon to become associated with George Peek and Hugh S. Johnson. He had an important part in the promotion of the McNary-Haugen Act, only to have it vetoed twice by President Coolidge. With Wilson, Peek, and others, he formulated the 1932 Roosevelt agricultural program, although the farm organizations are usually credited with doing this, and later became the directing head of AAA during the most important and trying years of its existence. He's now chairman of the St. Louis Reserve Bank. The last time I saw his name it was as Chairman of the national committee to choose the prize papers for the Journal of Farm Economics (published last November) relating to a price policy for American agriculture, a recognition of no little importance. His review of the development of agricultural policy since the first World War, published in the 1940 yearbook of the Department of Agriculture, is the most authentic account of the farm program of the previous two decades.

As an excuse for these first paragraphs of my paper I quote from the introduction of the article just mentioned: "If experience in this field teaches anything, it is that a continuous thread runs through the

evolution of agricultural policy notwithstanding its inconsistencies and contradictions. The programs of the present become the foundations for the programs of the future." And those programs, often by circuitous routes, grow out of the hard experiences of men who have been close to the soil and pretty close to the farmers' problems.

The soils of Montana, that often required more than a heavy mortgage to hold them in place, during those years seemed to be to agricultural economists what in an earlier generation the soils of Indiana were to writers, poets, and educators. I could name some more but I do not wish to labor the point.

The Second Show

When the farmers of America were seeding their spring crops less than a year ago, we were engaged in two mighty wars. Before those crops were harvested, we were at peace, or what we are wont to call "peace" for lack of a better word. Like industry, agriculture was geared to a schedule of maximum production, the like of which in the growing of food and fibre we had never seen before. But unlike industry, more than half of whose capacity was occupied by the manufacture of things designed for destruction, and thereby necessitating with the coming of peace, a radical change back to civilian goods, the products of agriculture are needed as much, or more, now as during the struggle itself.

Hence, agriculture has no real conversion problem in the present restricted sense of that term. We can go on producing very largely the same things; what agriculture faces once more is an economic conversion affecting the prices of agricultural commodities. It is the changes in the market, that have followed every major war of which we have record, and agriculture's disparaging position at such times, that are the source of our apprehension, and the reason for this timely conference on Marketing and Distribution.

Except in magnitude, this is nothing new to our generation. With a few variations, we have seen it all before. Indeed, it is almost as if we were sitting in a movie to see the film over again — only we hope, by some intervention of chance, intelligence, or directional skill, it will be rather drastically altered. The first few minutes of the second show, however, have not been very reassuring against it being an out and out repeat performance. What can we expect of the rest of it? What can we do in the way of cutting and splicing of the film, the incorporation of possible new sequences, to bring about a happier ending not only for agriculture but for the entire economy? We don't want any last-hour expedients. We're not here to discuss them particularly. We'd like to find out what can be done about this film if we should use the wide resources of our entire studio. This will require some deliberation, but we must remember that we haven't all the time in the world because the projection machine is grinding steadily away. The postwar period we were planning for has been here now for five months, although, for sure, it seems considerably longer than that.

Some Liabilities to Success

The agricultural plant keeps going almost as inexorably as time itself. As has been pointed out a thousand times, it is not amenable to short-time adjustments or control. Farmers do not and cannot shut off a part of their acreage, like a manufacturing plant, when demand for their products is likely to subside; they keep right on furnishing food and other farm products for the nation. Furthermore, when the rate of production has been stepped up through a series of years in response to a great emergency, it cannot be hauled down immediately, or even in the same time that was required for the increase. The stimulation sets off a linked reaction that is non-reversible, something like what the chemists call a catenary series. This is always an inherent liability and one that should be understood a little better by all groups in our economy. The only time farmers ever tried to use the direct methods of industry in controlling production to more nearly suit demand, it was a fiasco. Only last night I was reading a speech made by the chairman of the board of the Westinghouse Electric Corporation entitled American Economic Stability. After several well-put references to agriculture he comes to the "plowing under of the little pigs." His attitude toward that was very derisive as you would expect, although it is improbable that a day goes by in the operation of his own company that the same method is not used, and he thinks nothing of it. One should not blame industry too much for such an attitude, however, for farmers themselves take exactly the same view. The idea of such control was as foreign to their thinking and experience as the manufacture of Westinghouse air compressors for P-38's, to operate at thirty thousand feet, would have been if suggested to them. The "little pigs" are irretrievably fixed in the folklore of economics.

But, of course, right now we don't want to control production of farm commodities. We want it to be maintained, and I think it will be, regardless of consequences.

Another liability in our modern-day agriculture is also inherent to its very system. This is a conflict within itself, you might say. We push efficiency with such success that fewer people are needed in agriculture. On the other hand, we advocate inefficiency, or tolerate it, by the extension of subsistence farming as the only way to take care of those who are displaced by the improved techniques. This has gone on to a point where fifty percent of the farms produce only about ten percent of the products that go on the market. As Hambridge of the U.S.D.A. states it, to the extent that this conflict remains unsolved, we can only acknowledge that men are the slaves rather than the masters of their own machines. It is not a problem limited to agriculture. It is just some more technological unemployment that strikes at human values, a very likely source of some of the unwonted by-products growing up in the body politic that subside during good times but will break out again in full force when things are not so rosy.

Agriculture doubtless reached its greatest degree of efficiency in 1944 when, as you know, production was up 30 percent compared with 1939 and that with some five million less people on the farms and ranches.

Given the new machinery that our agriculture so badly needs, and some well-placed and timely labor, that efficiency could very likely be further increased. But it is not apt to be now with the shutting down of war-made industries and the return of men from the armed forces. Although the average farm worker in 1944 was receiving only 62 percent as much as the industrial worker, only the most extraordinary activity in industry could attract enough people from rural areas to hold down the farm population to the 1944 level, good thing as that might be. The wartime economy of the nation was shown, almost like a laboratory experiment, that one of the important drags on agriculture is the crowding of excess people into farming occupations due at least in part to the poor performance of other parts of the economy.

But the most pertinent liability of the day, however, (at least the one we see plainest) is the competition between agriculture and groups outside, each for its "fair share" of the national income. The basis for this is as old as the division between rural and urban populations, but was intensified by the division of labor that began taking place with the enlargement of the industrial revolution. Farm journals aggravated this split so much, about a century ago, that it is altogether too firmly a part of the consciousness of all groups. The jockeying for economic position, based on group pressures, as we see it exemplified today, marks out a sure road to inflation and a complete economic debacle. True, this competition may have within itself the mechanism of a counter-operating force, but we have no assurance that that will come into play before the critical stage is reached. The safer alternative is some realization of the public welfare. The 1945 Land-Grant College Report on Postwar Agricultural Policy expresses itself on this point as follows:

....."Legislation and other programs designed to aid certain groups at the expense of the national interest not only fail to provide adequately for the public welfare, but often may actually harm the specific groups which such measures are intended to benefit by postponing and making more difficult the eventual solution of the problems which they seek to correct." And here may be a good place to mention that, whereas our experience in developing, refining, discarding, and retrieving various methods of farm relief during the past twenty-five years should be, and can be, a most valuable storehouse of helpful knowledge about our agricultural makeup, it could also be, coupled with wartime expedients, a great detriment to the evolution of some sound economic progress. If we revert to the sectional isolationism of the past, which strongly inclines toward throwing the price of commodities into the political arena, we will be cultivating the worst forces of national disintegration.

Some of our Assets

But enough of the dark side..... Where are some of the silver linings that we might use to drape the sets of this second showing?

1. The dislocations in our agricultural plant are less as a result of this war than was the case with the previous one. The whole plant was far better coordinated to man's nutritional needs than took

place during World War I. Although our soils have been depleted perhaps more than we suspect (this of course aside from the great special problems in soil conservation), we have today a pretty well integrated agriculture compared with the disproportionate emphasis which was placed on cereal crops the time before. This has been an accomplishment in agricultural planning, during an emergency, of the highest order and deserves more commendation than has been directed to it. It should be added, also, that the expanded plant has to feed 140 millions within our borders now, rather than the 105 millions in 1920.

2. Judging from countless speeches (Eric Johnston must have made a thousand), and articles by economists, industrialists, and men of all walks and fields in society, we do not plan (when in our right minds) to go back to any more wealth-producing restrictions. And we hope to remove some. To restrict production is to become deliberately poorer. Certainly the farmer has a great stake in greater industrial production. It would relieve the pressure of an excess farm population, as I mentioned above; it would expand the national income; the fullest possible employment and increased national income would mean more money spent by the non-farm population for food and other products of the farm, and under some conditions, would help to improve also his foreign market. I know there are some "ifs" to this rather rosy round robin. I confess that I do not understand the propulsive mechanism nor do I know where the self starter is located. I know that one secret to America's high standard of living has come through the art of producing more and more for less and less. How far this principle can be expanded, I do not know. But I accept the principle that to restrict production is to become deliberately poorer for the nation as a whole.

3. The above is related closely, if not part and parcel with it, to the broadest recognition of the interrelationships in the modern world. I quote from Hambridge: "This shows up in a great many ways--perhaps most notably in widespread reiteration of the fact that the agricultural problem is only part of a more inclusive national economic problem. More and more people realize, for example, that the well-being of agriculture depends to a large extent on the amount and the steadiness of employment in industry; that city and country are linked together in a thousand different ways; that events on the other side of the world profoundly affect farmers in the United States:

"One of the powerful practical results of this recognition of interrelationships is a trend toward broader planning in the solution of economic problems. It rests on some such basis as this: What seem like separate problems are often found to be only parts of some larger problem; you cannot solve the parts by themselves; you have to work toward a solution of the whole; and this cannot be done without some comprehensive thinking and planning."

It is this rather self evident fact that led to the organization of this conference. And it is out of this proposition that the most good from it will come. "The national economy in broad outline" as Robertson said in the speech to which I have already referred, "consists of the sum total

of all our efforts whether playing, working, spending, or saving, as well as the emotional effort which we put into life. In fact all of us from our birth to our death affect it and are conditioned by it — the white collar worker, the man in overalls, the taxi driver, professional man, artist, farmer, businessman (big and little), banker, technician, housewife, government and civil service employe." You can't run any part of it in a controlled experiment and be very sure of your observations. In recent generations we have given up economic independence that was the source of pride of the pioneers for the dependence that arises from membership in a highly specialized civilization. Agriculture is about as dependent as any other segment of society, and in some respects I am afraid to its disadvantage, it is even more so.

The hopeful part is that this is quite different talk — quite a different line of thought about our agriculture in relation to the complete economic whole — than we were accustomed to hear twenty years ago. It takes agriculture out of the orphan class and makes it one of the family. Its supplications have been replaced by stock in the company and consequently both roles, suppliant and stockholder, should not be played at the same time.

4. I think we should not fail to list with our assets the cumulative effects of science on agriculture. No group is more conscious — and we might add — more urgent in its demands now for scientific aids to ever-arising problems than modern agriculture. Indeed, very often the faith exhibited in the scientific method transcends the possibilities of science. We live the way we do because of past science and we farm the way we do because of the agricultural science of the past two generations. To back this up we have a great working capital in the resources of that science, mostly in the form of men and women..... No better example can be sighted than the case right here in Oregon. I have been impressed no end, and any one else would have the same reaction, to the reports of the postwar agricultural planning committee headed by Mr. Ballard. Every phase and segment of the state's agricultural industry was subjected to scientific study and analysis. Taking just one of the many individual reports, that on marketing, we get a clear and accurate statement of the case and basic facts on which solutions to the many marketing problems will need be rest. Oregon farmers are particularly susceptible to the adverse effects of a surplus food-fibre situation because the state is so dependent on out-of-state markets. We produce a surplus of each major crop except swine and sweet clover seed. Few of our products require less than fifty percent out-of-state marketing and many run better than eighty-five percent, the average being around seventy. The competition that comes out of such a marketing situation works back and pervades every phase of production and preparation for the market.

It was probably this fact, above all other (and what could be done about it), that was behind the Economic Conference of agricultural, industrial, and financial leaders on this campus in 1924. The success of that conference, which helped to guide our agricultural economy through many trying years, was in our minds when this one was called. That is why we are so sincerely grateful to the many men and women who have consented

to participate in this program, and particularly to those outside of agriculture, and many from outside the state, who are with us.

It is fortunate, indeed, that agriculture and industry have come to have a broader frame of reference than obtained a generation ago. We face many profound changes that will try our souls, and we must set ourselves to adjust to them to the best of our ability. Vast dislocations have come about as a result of the war. War and its destructive ravages of men and resources exact a toll that cannot be at once encompassed by our feeble minds. There are latent effects that do not show up right away. From a struggle of the magnitude of that which we have just gone through, there can likely be no quick recovery, at least none that does not have the germ of greater upsets within itself. To a world already unstable, its effects will bring more instability. "The United States didn't pay the full economic price for the war while it was being fought, so we must pay for it after it is won." No doubt millions of our people will rebel against doing what that payment will require. Economic, social, and political convulsions as powerful as an earthquake are undoubtedly future possibilities.

Although the emphasis in this conference is on economics, we all know full well that the problems we are facing will require more than economics. If we direct our minds to just the agricultural segment of it, we know that, while an understanding of our economics and our economic interdependence will help, it is not enough. We are strongly inclined to live more by our sympathies and emotions than by our conclusions. We know that we cannot fit human affairs into little cubbyholes and make rigid rules according to which human beings ought to behave. The modern world is not just physical and technological, it is basically psychological and beholden to old human cultural patterns of thought and action. This is what my philosopher friend, M. L. Wilson, calls "Beyond Economics."

You know it is striking how the minds of men, widely separated in their fields of activity and interest, so often converge upon the same basic ideas. I should like to read a paragraph from Wilson and then show very briefly how a strong segment of educational thinkers have arrived at the same conclusions.

After reviewing the near overwhelming complexities of the agricultural problem in its entirety, Wilson says as follows:

"The point of view best adapted to avoid oversimplification on the one hand and harsh intolerance on the other, and calculated to guide us toward the most practical methods of reform, is the cultural approach. The cultural approach is based upon a keen appreciation of the inter-relatedness of all social phenomena. Both laymen and social scientists generally recognize that the facts of our daily lives cannot be clearly divided up and put in separate departments as the artificial divisions of the social sciences suggest. Economists, political scientists, historians, psychologists, geographers, sociologists, and theologians all recognize that the crucial facts in the life of any individual or in any social situation cannot be correctly thought of as exclusively political,

exclusively religious, exclusively economic, or exclusively anything else. They will merge into one another; and a single fact viewed from one angle may seem wholly economic, while from another equally legitimate point of view it appears wholly psychological. Actually, of course, facts in themselves are not economic, political or psychological.

"The interrelationship of the whole range of social facts is at least vaguely perceived by everyone who gives serious thought to the subject. And it has been admitted by the social scientists of every specialized field. The point, however, is that while ordinarily this interrelationship is dimly recognized and grudgingly admitted, the cultural concept accepts the implications fully, gives them primary emphasis, and even makes them the foundation of its method."

This is exactly the line of thought that is uppermost in the minds of serious students of our modern life and civilization, and this is the ferment that is strongly at work in higher education. No institution can ignore it without sacrifice of its students and the commonwealth that supports it.

Oregon State College is thought of as a technical school. We are. That is the way we were established — agriculturists, engineers, scientists, foresters, etc. But we know that there are more viewpoints to any proposition, however technical it may appear to be, than purely the viewpoint of the technologist. "The birthplace of the future is in the laboratory" and we expect great things to come out of our technical pursuits, as they have in the past, to help in the creation of new wealth that can give us more of the good life. But we have come to know fully as well that the good life, be it rural or urban, requires the development of more than the technical approach. It requires all the ingredients that go into responsible citizenship. We have fought, and our young men have bled, to make this a moral world. Any theory of economic and social progress that leaves out this consideration will be painfully deficient. There must be an ingrained, underlying sense of human justice to illumine the mind and guide the will to act. Without that there can be no stability to our efforts at integrating agriculture with industry to mutual benefit. Without that there can be no peace.

I would like to conclude with what I think is a good story for which I am indebted to Professor Allan Nevins of Columbia University who used it in a recent Newcomen Society address. It is the story about an American engineer, Mr. Herbert L. Schage. "He was one of the men in charge of constructing the costly Salmon River bridge in Alaska. The steepness of the river banks required that this bridge be of cantilever type. The two ends were built out from the opposite shores, to be joined in the centre by a final heavy truss. Taking advantage of the fact that this river freezes in winter to a depth of nearly sixty feet, the engineers placed a trestlework of wood on the ice to support the two bridge-ends; for they were confident of completing the structure before the Spring thaw.

"The work progressed steadily. The two wings, of immense weight, were extended over the icebound torrent until they almost joined; and the central truss was then dragged up. To their horror, the engineers found

that instead of being the required sixteen feet, it was but fourteen feet long. The specifications engineer, in drafting his order, had failed to close a vital numeral. Spring was fast approaching. More than a million dollars had gone into the bridge. If it fell, the money and a year of time would be lost.

"Imploring cables burned the wires to the firm in Pittsburgh which had made the central truss. Extra gangs of men labored continuously at the steel-mill until a new structure, sixteen feet to the inch, was thrown on the flat-cars. It was hurried at express-train speed to Seattle. Here a ship was waiting with steam up; a vessel loaded to the precise line at which it could make the best speed Northward. Gangs of men frenziedly hurled the truss aboard the vessel. At the Alaska terminal new gangs still more frenziedly unloaded it on a waiting train. That train was whisked to the banks of the Salmon River. Here more frantic men, toiling like demons, lifted it to the centre of the structure and fiercely bolted it into place. 'And,' Mr. Schage said in telling the story, 'forty minutes later the ice went out!'"

I think there is a lesson in this for America. We have come through some very tight places and this has been happening more frequently as time has gone on. We shouldn't depend on any 40-minute margin. We don't want this film to end as a Pearl White thriller. It's going to take the cooperation of industry, labor, and agriculture, working not separately but as a unit, not depending entirely upon economic doctrine but also bringing into play no small amount of humane doctrine as well if this picture is going to have the happy ending that we want.

THE STAKE OF THE PACIFIC COAST IN TRADE WITH THE ORIENT

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Paper Presented by George V. Cooley, Assistant to the President

Comment today on the future of trade in the Pacific must necessarily be based on a long series of "ifs". The Pacific area has just passed through its first major war in recorded history. Unlike Europe or even these United States, there are no precedents to invoke from past catastrophes and past reconstructions. The old pattern is gone and only its threads remain. Where and how they can be fitted together again, what new threads will be necessary, no man really knows. Where to start with reweaving is still obscure.

The "ifs" are economic, social and political. They involve the policies and purposes of all the nations and all the unnationalized peoples of a vast area on each one of these three counts. About all we can do is to try to catalog briefly those that occur offhand. Any listing is certain to be full of omissions but it may at least show the gaps in the cataloging and so help to fill them.

To simplify discussion it might be well to agree at the outset that we are dealing primarily with the trade relations of the United States and Oceania, Australasia, Japan, China, Malayasia, the East Indies, Indo-China, Siam and British India. Siberia and the whole Soviet attitude toward post war foreign trade are certain to be tremendous factors but it is too early to do more than guess vaguely the parts that they will ultimately play.

It is also impossible to make any distinction between the major divisions of our own country and to particularize soundly on the position of our own Pacific Coast. However, it seems a safe assumption that the trade of this Coast transpacific will develop or fail on relatively the same scale as that of the nation. Geographically and transportation-wise our Pacific Coast ports have the edge as the logical gateways at least as far westward as the Straits and the Indies. Trade tends to flow along the lines of least resistance and it would not seem that we need fear securing our fair share.

There are two further assumptions which do not seem wildly speculative. There will be a growing trade in the Pacific as the years go on. The United States can if it so elects, and seizes its opportunity now, play the major role in that trade development.

Right there we hit our first and almost our biggest "if." For almost one hundred years this nation has not been minded to and consequently not organized for foreign trade. Our national thinking on it has been and seemingly still is absolutely negative. Among certain small groups there has been plenty of talk and in isolated instances that talk has been translated into achievement as witness Grace on the South American West Coast, the United Fruit in Central America and some of our major oil and steel companies in all corners of the globe. These isolated examples prove that Americans are as capable foreign traders as any in the world but there are very, very few.

From time to time over the years our people as such have shown signs of an awakening interest but in every case the spurt has been short-lived and after a few futile dabs and dabs we have stood aside and let George do it. George in this case has been Britain, Germany, Japan and to a lesser extent Holland and France. Two of the five are no longer factors.

Incomparably the greatest trade developer the world has ever seen has been Britain. Over four hundred years ago she began to fight her way to supremacy in that field and for close to a century and a half she has won and held it. Regardless of changes in administration, regardless of a constantly shifting domestic scene and policy, and regardless even of revolution, the brains and efforts of Britain - Government and people - have consistently hewed to the line - what is good for her foreign trade is good for Britain.

At best Germany and Japan were poor imitators - the latter particularly so. They followed Britain's practices of many years ago and their whole approach originated no new methods of doing foreign business nor novel

improvements on the old methods. In finance, insurance, shipping and all the other procedures essential to trading away from home, the world still works along the lines which the English have slowly evolved over the years. The best Germany could do was to "cut the rates" on her chief competitor. The best Japan could do was to follow Germany's lead in that field and add to it the outmoded method of selling and buying with bayonets.

Whether innovations and new approaches are possible is somewhat moot. No one has ever tried them. But certainly in our domestic economy we have introduced plenty of them in production, in merchandising and in transportation. Perhaps we can do in foreign fields what we have done at home.

That presupposes, however, a change in our national feeling and thinking which would involve,

1 - A willingness on the part of our young men to go abroad to live for long periods - mayhap permanently - as our ancestors did in the first fifty years of the republic and in the settlement of the west.

2 - A consistent government policy of assistance and encouragement to foreign trade carried through from administration to administration regardless of party changes or domestic issues - and there we now think in terms of the tariff and of "trust busting".

3 - A willingness on the part of private investors to risk their money in foreign fields as readily as they now risk it in Wall Street - though Heaven knows billions of their money are going into foreign fields today without their knowing it.

4 - A national sentiment which would regard the legitimate expansion of our foreign trade as a national interest and which would close its ears to the cries of "imperialism" and "dollar diplomacy".

How many of these things come about and when, are surely major "ifs" but all are necessary and must be realized if we are to attain our objectives in the foreign field.

Then we come to the second and third major "ifs". Assuming the United States stops fooling around and turns its hand to foreign trade, particularly in the Pacific, how can we be paid for what we sell? There are only two known methods - by the exchange of goods for goods or by the sending of money and goods abroad to establish new industries in other lands and the taking of our return over a long period in money dividends. There may be other ways but they remain to be invented.

Mind you, this is not a question of "profits". It is simply a matter of getting back what you put out. You could not stay solvent long if you continuously loaned your neighbor money and he continuously never repaid you.

On the exchange phase, most of our foreign trade thinking has always turned on exports. If we are to make real progress in trade

development in the Pacific we should begin to think in terms of imports and to center our thinking on how we can develop them. It is no easy task. We have so much of everything within our borders. We really need so little from the outside. But answer the import problem and the exports will take care of themselves. Our products, line by line, are the best of their kind. Our domestic costs and our ability to meet those of our competitors are probably out of line but increased volume and full employment would certainly seem to justify marginal prices abroad while we are establishing ourselves. We must experiment with new products and possibly cultivate new tastes. We must stop trying to see whether we cannot in some way produce or find substitutes for the native products of other nations or we will remain dilettantes in foreign trade.

The business is one of substantial complexity. The exporter is seldom directly interested in imports. Yet it can mean a great deal to an automobile manufacturer in Detroit if a sugar refiner in New York elects to buy his raw sugar in Formosa as against, say Cuba or Hawaii. If we drank tea instead of coffee, our trade with Brazil would suffer but think what it would mean to trade with China and Ceylon.

The third "if" concerns monetary investment abroad and again it is far from simple. Unquestionably we have a management and an engineering and a labor "know-how" which is today superior to that of any other nation. It is predicated on a system of free opportunity and free labor. It is constantly striving to raise the living standards of the nation and to date it has been notably successful. If American money goes abroad it must unquestionably and rightly ask that the same methods and motives will prevail in the enterprises which it makes possible. It will properly want a real American direction of its use.

Obviously that will not fit the colonial theory which has so long prevailed throughout many of the Asiatic areas. With the utmost respect to the colonial powers they have had plenty of years in which to do and not much has been done, nor does the experience of twenty years with the "mandate" system augur too well for any marked change under United Nations Organization "trusteeships".

By the same token in the non-colonial Asiatic areas, will the powers that be willingly recognize the merits of an industrial system so foreign to the conceptions and practices of centuries?

Finally, how far will our own people go with their government in aggressively supporting not American investments or American profits but rather the American way of doing things in Asia. The Philippines are proof that it is a workable way and one which appeals to the people with whom it is worked, but even today in the Philippines there are indications that the powers that be prefer the bayonet to the ballot box as a decider of elections.

Unless the answer to these questions is an all-the-way affirmative, investment as a method of getting paid for our exports looks definitely dubious.

Finally, there is a fourth major "if". How far will the people of this nation go in the assumption of responsibility for preserving peace? Whatever the police powers of the United Nations may be, it is certain that no one else can effectively police the Pacific. It is a naval job and ours is the only navy capable of performing it. The British Navy in the Pacific during the war was simply lost under conditions for which it was totally unadapted.

If we do assume this responsibility - and it is hard to see how we can avoid it by wishing it on someone else - it will naturally affect our trade throughout the area. Navies must have major bases, intermediate supply points, and ports of refuge. Those in turn must be supplied with all the material that makes a navy function and the home base must be the ultimate source of supply.

The Pacific area is so great that the bases required to properly police it will be more numerous and individually more substantial than those Britain scattered throughout the world when her navy dominated all the oceans. Their supply alone will constitute a very substantial item in Transpacific trade and the dollars spent in their maintenance will be a definite factor in our import balance.

But all of that is qualified by the still existent "if", for certainly whatever we have done on paper to date has been no realistic acceptance of this particular responsibility.

Bearing always in mind these four major "ifs" and numerous lesser, related ones, there are two assumptions which do not seem completely speculative.

First - we will certainly have some trade in the Pacific and its growth and size will largely depend on what we do or leave undone.

Second - If there is to be growth it will be slow and hardly won after the short-lived spurt which our government's spending and a flash of speculation will give it in the near future. That particular period will fool a lot of people but it will not be in any sense foreign trade.

Thereafter it seems almost certain that the comparatively minor trade we have enjoyed over the past twenty-five years will revive. Old connections will be resumed as they always are, and the flow of exports from the northwest to the Orient and of imports from the Orient to California will re-create itself. Right there one constructive step is possible and possible now. The Pacific Coast should think and act as a unit in all its future approaches to Transpacific trade. In the years preceding the war there was entirely too much sectionalism and too many local jealousies. California must admit that the Northwest is the present source of basic export cargoes - timber, grain and their products. The Northwest must admit that the consumptive capacity of California has brought to her ports the lion's share of Transpacific imports. Some way must be found to match these two pieces and fit them to a cohesive whole. Then the Coast and the Trans-continental railroads must combine to aggressively supplement our

local exports and imports by swinging a fair share of the interior trade both ways through the Pacific gateways. They have not, in the past, had that share because of local jealousies and overall lethargy.

Beyond this the growth of Transpacific trade will be slow because it will take time aplenty to resolve the major "ifs", assuming that they are resolved. Relatively the dislocations in the Pacific area, as a result of the war, are far greater than those of Europe. But fundamentally the United States finds itself in a position with respect to Pacific trades which seems to hold greater opportunity than any other of our commercial outlets abroad.

Whether we like it or not, we are today the physically dominant Pacific power without even a near rival, and regardless of our future use of that dominance it is a fact which has its effect on the rest of the world. Our "face" in the Orient is at its highest level. The magnificent job MacArthur has done in Japan and the gallant loyalty of the Philippine people to the Allied cause have raised our prestige throughout the Far East to a point where our moral influence equals our physical dominance.

Along with this it so happens that the Pacific area has supplied us in the past with more commodities which we cannot produce for ourselves than any other area in the globe. It is not so much a question of volume as of variety. Tea, jute, copra, natural rubber, cocoanut, vegetable oils, manila fibre, silk, China wool and cotton, shellac, and tin are leading examples. So at the outset there is the nucleus of a two-way direct trade. In volume the South American Republics have probably greater import possibilities but in diversity they are a poor second and they lack the consumptive possibilities necessary to a true balance.

If we are willing to answer the major "ifs" with definite and continuing affirmatives; if we are willing to exercise an unending patience and tolerance; if we are willing to pull together in the common task and bury local and sectional jealousies to get results, there would seem to lie before us the final and by far the greatest opportunity of our westward development. It is up to us and no one can do it for us.

CHEMISTRY'S CONTRIBUTION TO THE DEVELOPMENT OF NEW CONSUMER GOODS

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About the most difficult thing in preparing a paper on this subject is deciding where to stop and what should be covered in a field which is so vast as to defy any attempt to delimit it. The subject of the talk might better have been labelled "A Little Bit About Chemistry's Contribution to the Development of New Consumer Goods". The "Contribution" of chemistry is all inclusive, for when it is considered that Chemistry, Physics, Engineering, and Mathematics are all interrelated and overlapping, it is impossible to pick out any new product for the consumer

without including chemistry as one of the contributing factors.

Before beginning to talk about some of Chemistry's new products, it will be worth while to see how large an industry we are considering. The 1945 Chemical and Metal Flow Sheet book gives the following data for Chemical manufacturing plants.

	<u>Number of Plants</u>	<u>Number of Wage Earners</u>	<u>Value of Product</u>
Chemical	15,441	981,041	11,102,318,000
All other mfg.	184,230	7,886,567	56,843,024,000
% Chemical of Total	8.38	12.43	19.53

Thus we see that chemical manufacturing plants comprise over 8% of all manufacturing plants in the U. S.; employ over 12% of all the manufacturing workers; and turn out products valued at more than 19% of all manufactured products. Average value of products turned out per employee is \$11,300 for chemical plants compared with \$7,200 for all others.

The vastly greater part of all manufactured chemicals are made from or originate in only about 34 important sources such as water, coal, agricultural products, air, petroleum, etc. Of these, water is the most important, being used in some phase of the manufacturing process 99% of all cases, and air next, being used in 96% of all processes. Thus we are indebted to two of the most common of all materials for a countless number of chemical products.

Most of the workers in technical fields tend to be optimists about the value of the new ideas developed by them. The writer is no exception and in order to forewarn you of the enthusiastic statements which may be made about new products, it will be well for all of you to bear in mind that new products are not always an unmitigated blessing to all industries. For example, it is not hard to see that our use of the automobile for transportation has curtailed the popularity of buggy whips, and as a somewhat more modern example it seems certain that increased use of airplane transportation is going to cut into the revenue of railroads.

Moreover, many new products, while possessing great advantages over old in some respects, are inferior to the old in other respects, and so they will not be the entire answer to all our needs.

Then too, even though we have read in all the newspapers, Sunday supplements, and magazines about the wonderful new products which we will all be using, it is a fact that many of them will not be on the market soon because of the question of cost. Until a product can be sold in competition with another, or as a new product standing on its own feet in a new field, it must fall within a certain price limit or its use will not become widespread and a significant factor in our economy.

Perhaps you may have read recently about mink coats for dogs, and \$2000 men's overnight bags for sale in New York. It is safe to predict that neither of these two items will be an important economic factor in our lives. By and large, and in general though, new products are complementary to, and auxiliary to existing consumer goods, so that a new product will usually add manufacturing capacity to our existing plants, without interfering badly with other established industries and products. Hence the effect of new developments are favorable in the overall picture to our economy and to the employment level, and at the same time add to our comforts and satisfaction in living.

In attempting to set before you some of the new developments, and discussing some of the most important of the hundreds of new products, it has been thought necessary to try and analyze the factors which make a thing valuable to a consumer and of widespread use. These factors have been boiled down to three which in the writer's opinion are the determining factors in developing a new product for consumer use. These are:

- I. Will there be a widespread demand for the new product?
- II. Are the raw materials for its manufacture available, or, if not can they be made available?
- III. What will it cost to bring out the development and to make it available to the public? If the cost is excessive, public acceptance will not be universal.

It is on the basis of these three criteria that the major part of the new products to be discussed have been chosen out of a literally hundreds which could be mentioned. Later, however, a few of the promising fields which are not well-known will be discussed.

SYNTHETIC RUBBER

The first chemical to be discussed is "handmade" or synthetic rubber of which we have all heard so much. Certainly it can be said that it fulfills the first requirement of widespread demand, for our peacetime use before the war of rubber goods was of the order of several hundred thousand long tons per year. The second criterion - raw materials - is also met, for we can make rubber out of a great number of things, the two now being used to the greatest extent being petroleum and grain alcohol. Its cost is something slightly more questionable, since natural rubber before the war was about an average of 15 cents per lb. and had sold as low as about 6 cents, and our wartime rubber has certainly cost us more than that. Synthetic rubber has so many advantages over natural rubber that even at a higher price than natural rubber its use to a large extent in the future seems to be assured. Its cost even now is not much greater than natural rubber, and under pressure of competition and with improvements in process the cost will no doubt decrease.

This is speculation, but it may not be too visionary that a few years from now when you buy a new car you can expect the tires which come with

the car to outwear the car. At present the synthetics are no better than natural rubber tires, but probably this situation will change in the future. Also, with the car itself, you may be riding on some sort of sponge rubber seats or its equivalent, which will be washable and enduring. In our homes, the sofas and perhaps even mattresses may well be made from this or a similar material, and a good many other things in the home — perhaps the sinks, or maybe even the dishes can be made out of a harder grade of synthetic. Telephone and electrical wire insulations also can, to a goodly extent, be made to advantage from synthetic rubber where other substitutes (as mentioned later) have not taken over the job. One type of synthetic rubber is better at high temperature than natural — another better in low; one more resistant to one chemical, another more resistant to others. A multitude of uses and a multitude of rubbers will be the pattern for the future.

Its probable importance in dollars and cents is a good deal easier to estimate — even though it is only an estimate and a rough one at that — than the importance of most of the other new products which are going to be mentioned today. For this reason, I am going to bring in this estimate even though it is a rough one, and may be off a good deal in either direction. For most of the new products there is too much speculation involved for me to try and give you an overall picture.

Our synthetic rubber plants in this country cost us under wartime conditions, and with high construction costs in the order of \$620,000,000 and their capacity is now something like one million long tons per year. At a conservative estimated peace time consumption of 350,000 tons per year (about 1/3 our capacity) and at a price of 15 cents which is not unreasonable, the value of the rubber to be produced for our civilian economy in the U. S. will be about \$125,000,000 yearly. This is more than 1% of the value of all manufactured chemicals according to the data already cited, and on the basis of these data would employ more than 10,000 men and women. These figures disregard any export business. The export trade should be quite important in addition because not many other countries have our raw materials and technical skill. Neither does the estimate on the effect on our economy take into account the vast amount of money circulated in the selling, fabricating, and utilizing of this one product.

If you will keep in mind the probable magnitude of this one example (synthetic rubber) while several other products are being discussed, it will be helpful in getting an idea what the effect and contribution of chemistry and allied sciences will be on all of our futures.

PLASTICS

The next subject chosen is a topic all of us think and talk about, and all of us are asking ourselves when these wonderful new plastic products will be here. Well, the first rivulets are here now, and there will be an ever-increasing tide for a good many years to come — longer than anyone can predict, for there seems to be no end of them. Nylon was the most notable precursor of this flood, and nylon is — or was — so commonplace that we had even given up remarking about its presence. It

seems hard to realize now, that Nylon did not appear on the market in any quantity until 1940. In 1939 there were a few pairs of hose and other preliminary products sent out for trial, but there were none sold in any amount until 1940. Between 1940 and December 1941, we all came to accept nylon as part of our ever-day possessions and belongings.

Synthetic plastics can be conveniently grouped into the following general classes.

1. Fibres — such as nylon
2. Phenolic resins and plastics — Bakelite is the early one.
3. Amino-aldehyde resins — Beetle or Plaskon
4. Cellulose derivatives — rayon and celluloid being the early ones but with later ones such as tenite, Luniarth, and Plastacel.
5. Acrylic resins — Lucite
6. Polystyrene — Styron, Lustron
7. Vinyl Family and Polyvinyl — Saran, Vinyon, Vinylite, Butacite
8. Alkyd Thermoplastic and Thermosetting
9. Protein — Nylon
10. Rubbers and elastomer — G. R. S.
11. Miscellaneous

From this listing alone, one can see that there is a large field, and its enormity begins to be appreciated when it is remarked that each one of these ten fields may have from only one member (that is known now) up to hundreds or thousands.

PLASTIC FIBRES

One of the most important sources of consumer goods in the U. S. is the textile industry. Nearly 15% of the wage earners in the U. S. are in this industry (including manufacturing, fabrication, selling, etc.). This has been a relatively stable field so far as output is concerned; for 25 years ago the U. S. Textile industry processed about four billion lbs. of natural fibres — wool, cotton, and silk, or about thirty lbs. per capita. At this date the textile industry has reason to feel secure in its position for these same fibres had been known and used for thousands of years, and the per. capita consumption was reasonably steady at about thirty lbs. per year. But about 25 years ago chemistry stepped into the picture (and it was not always the textile industry's chemists either) and the changes made in the textile industry have shaken it to its roots. Startling as these changes are they have not yet run their course.

The quantity of fibres processed in 1944 was over six billion lbs. (1/3 greater than 25 years ago, still about thirty lbs. per capita) but silk had dropped almost completely out of the picture and cotton and wool were decreased.

The earliest man-made competitor of the natural fibres was rayon, a cellulose fibre, first manufactured in the U. S. about 1910. By 1942 this rayon industry had grown to more than 600,000,000 lbs. in spite of the fact that rayon, while having luster and softness lacked durability and stability. Even so, it has cut into the textile industry for about 10% of the business.

Rayons have been improved markedly, but we are going to talk more about the newer plastic fibres. Keeping in mind the effect which rayon, with its defects, had upon the textile industry will help us to grasp some idea of the future effects of the new materials.

NYLON

Of the fibrous plastics, nylon possesses many properties which give it an advantage over natural fibre competitors, though at the same time, it has a few disadvantages which will not allow it to become the universal fabric and displace all the rest. It is strong and very elastic and it is going to be used among many ways, importantly in the following things: hosiery, dress goods, upholstery material, tires (nylon used as the cord in tires is the most satisfactory thing found yet, and is used particularly by the military in heavy duty tires, and will also be used for this by civilians in the future). Photographic film, rope — it is better than hemp for some purposes—toothbrushes, tennis and badminton rackets, fish lines, dental floss, surgical cords, and a host of other important uses. It does, however, stretch under prolonged use.

In the past, benzene has been the primary raw material used, and it will probably continue to be an important source; however, nylon can be made from a number of other products, since benzene itself is not a constituent of nylon and must be modified chemically to an adipic compound — a chemical family. For example, a shorter step in the manufacturing process would be to start with a chemical known as cyclohexane — one which occurs in petroleum to quite a large extent. All of us know that Nylon hosiery was no more expensive than silk, and in view of its enormous growth during the war, it is easy to predict that nylon should henceforth be cheaper than silk. For example, it has been estimated that a crush-resistant dress of nylon under present conditions would cost about \$28.

Among the other new plastic fabrics are "Aralac" (developed by National Dairy Products Co.) now being used in hats and coat linings and dresses, a casein plastic made from skim milk, Koroseal, Geon, and Vinylite are Polyvinyl-Chlorides and they are used for waterproofing materials such as Nylon, also for shower curtains, watch crystals, toilet articles, and curtains. Keratin is a plastic made from hooves, horns, and even chicken or other feathers; Saran or Vinyon to be mentioned later under other types of plastics also can be used for anything from yarn to waterpipes and give good promise of widespread use for such purposes as elastic tapes, bandages, and for hot weather clothes because of its soft feel and resistance to perspiration and washing in hot water; Velon, somewhat similar to the Saran just mentioned, but which has some other properties such as a lustrous appearance, ease of coloring, good strength, heat, and solvent resistance (almost impervious to water) and resistance to moths and termites; it is promising for such uses as clothes, braids, fabrics for cushion covers, curtains, and even window screens since it is resistant to weather and does not rust or weaken with prolonged exposure. Shoes and slippers, handbags, and other allied uses are also indicated. Polyfibre, made from polystyrene, is another new product in the fibre class, and will probably be most widely adopted in making bats similar

to felt, life preservers (it floats because of low density) and perhaps a most important possibility is the making of bags and containers for shoppers, grain, flour, etc. Fortisan, another new fibre of the cellulose family, possesses unusual strength and for this reason was used widely during the war for wear-resistant clothes, tents, etc. It is light in weight when compared to other fabrics of equal strength. Avisco is another rayon-type material, perhaps to become important in sheer goods for underwear, fine broadcloths, gloves and shirts.

It seems very likely, particularly when the stable demand for fabrics is considered, that new fibres must effect consumption of others just as rayon has done. Of the natural fibres mentioned above, silk will undoubtedly be the one most seriously hit, and some economists go so far as to predict the virtual disappearance from any U. S. market of silk. Like rubber, this effect will not be so serious upon U. S. industry as it will be on the foreign trade since the same mills in the U. S. that consumed silk can use the new materials too. The world-wide trade will of course be affected -- to what extent is not known. The decline in wool and cotton will probably be a good deal slower, especially since wool still has some virtues that the new fibres do not yet possess. Cotton constitutes about 80% of prewar fibre use, and it will no doubt lose some ground to the new materials, but not at a rapid rate since it takes time to adapt a new fibre to the market, and since we do not know yet what the cost of making all the new fibres will be except in the case of a pretty well established one such as nylon or rayon. Rayon is, in the U. S., pretty largely made from wood pulp of recent years although cotton linters are still a factor. To sum up: -- Rayon, or regenerated cellulose in filament or cut staple form, has grown to the point where it is nearly fifteen per cent of the total textile industry. Nylon has taken over a large portion of the hosiery industry and in the years to come will find wider and wider use in upholstery, suitings, and a myriad of specialty effects which start small and grow in volume. Saran found a war use as mildew-proof jungle netting, and it will be interesting to see all the postwar uses it will find. Vinyon and aralac still have before them a bright future, and there are at least half a dozen new fibres just out of the test tube, the growth and development of which will depend on their peculiar and unique properties. Certainly, they will find many applications not now dreamed of.

PLASTICS -- GENERAL

In the vast field of plastics we have up to now discussed the fibrous ones only. There are many and diverse other types as you will remember from the classification of plastic types presented just a while ago.

Of these, Lucite, or as it is sometimes known, Plexiglas, is one of the very interesting newcomers. It is made from a not very common chemical-acrylic acid, but even though not common it is not excessively expensive to make. Large quantities were used in the war for bomber noses, and almost all of us have seen it one time or another. It will probably become pretty common and useful to us. One of its most interesting uses

will probably be in lighting fixtures. Not only does it transmit more light than glass of equal thickness (glass about 87%, lucite about 92%) and hence is clearer, but more interesting it is possible to "pipe" light through it much as we do water through a water pipe, so that it may not be out of reason to expect that the house or office of the future will have one central lighting system, just as we now have central heating systems, and all the light will come from a Lucite pipe entering the room. This property has already become useful to surgeons and doctors for their exploratory instruments. Also interesting is the fact that Lucite does not form a sharp edge when shattered as does glass. It may therefore be used as windshield or window pane material. Miscellaneous uses are for furniture, preserving specimens, and highway reflectors. It is easily dyed to desired color, and furniture made from it has an attractive appearance.

Another plastic family with some of the same or similar properties is the polystyrene group manufactured by the Dow Chemical Company. It is made from benzene as a starting material along with ethylene and other relatively cheap chemicals. Its electrical resistance is exceptionally good, and it is now being used to some extent in making battery boxes, refrigerator parts, radio insulation, window glass substitute, toilet articles, lighting fixtures, and kitchen utensils. In general its light transmission is not quite so good as Lucite, but better than the best plate glass. It may be cheaper than Lucite because of cheaper raw materials.

All of us know about bakelite, the phenolic material, but perhaps not many have been aware that there have been rapid advances made in compounding other bakelite types which will have special uses. For example, they are suitable for durable bristles, brake lining, lacquers, a cement for glass and dishes, a binder for laminated wood and a host of other uses. Made from Pitenol formaldehyde and allied types, these can be made plentiful and cheaply compared to most other plastics. Telephone stands, receivers and transmitters, washing machine stirrers, and out-board motors and small ship propellers are some other possible uses. In combination with asbestos the bakelite type plastics are now being used to make a chemically inert lining for tank construction and is used in cases where particularly corrosive liquids or gases are to be stored in tanks.

A combination of the phenolic type with other resins has resulted in a water softener giving unique results compared with previous treating results. Using this new material water can be made practically chemically free from any impurities, where previously a treatment left some other chemical in place of the one removed; the resin treated water comparing favorably with a truly distilled water. To date, these water softeners are a little too expensive for home use but this situation may be changed soon.

The last family of plastics I am going to mention is the cellulose family -- a very important one too, but space will not permit saying anything much about it other than some of the newer cellulose plastics are

exceedingly tough materials, transparent, and able to be dyed to any color. They are promising for all types of containers where toughness is desired, and for covering a material to be protected by a film or lacquer. For packaging goods this type should be about perfect if it can be made cheap enough, and since cellulose is found everywhere in nature, its cost will probably not be excessive.

WOOD TREATMENT AND IMPREGNATION

Some fifty species of woods are grown in the U. S. which are used commercially, but there are above a thousand not so used. It is a self-replenishing resource with care in harvesting and planting. Most of you are familiar with the laminated wood structures developed recently and possessing great strength for weight. Plywood is one of the older results of research done on wood as a structural material. I am not going to dwell upon these older laminated materials.

There is another more recent development however, which may be equally if not more important so far as the use of wood for a structural or decorative material is concerned. This development is the impregnation of wood with a chemical which will enter the pores of the wood, and then upon suitable heat treatment more or less combine with the wood structure. The name of the chemical most studied is dimethylolurea. The method of the treatment is simple, it being necessary only to immerse the wood to be treated in a bath of chemical, then withdraw it after half an hour or hour, and heat it to a moderate temperature for a few minutes or hours, perhaps a day under certain conditions. During this heating period the dimethylolurea reacts with itself to form a polymer which is so intertwined with the grain and fibre of the wood that it can be said to be part of the wood itself.

Properties imparted to the wood are among others; wood becomes harder, more durable, stronger, loses much of its tendency to shrink or warp, grain will not rise on wetting, takes a polish, can be dyed to any suitable color (for instance a light-colored pine may be given the color of cherry, rosewood, or mahogany, or can be dyed a bright green or purple or red); reduced tendency to splinter during sawing, scratched surfaces can be restored by rubbing, and very important, — the fire resistance is increased markedly, and the wood is resistant to fungus, termites, and pest infestation.

Poplar can be made harder than hard maple, soft maple can replace dogwood or persimmon in textile shuttles, etc..... The new DM chemical can also be used on sawdust — coarse or fine — or it can be used with a veneer or plywood. Cost is about 1-1/2 mills/sq. ft. for veneer, 3.5-4.5 cents per bd. ft. for wood, and if treatment is confined to outside of wood (case harden) cost is 1 cent per bd. ft., approximately.

SILICONES

A new family of materials known as silicones is becoming widely used. Silicones are made from silica (sand) and oxygen, two very

abundant materials found in the earth's crust. Together the two comprise 76% of the earth's crust. Just as one or two indications of their potential uses, it can be mentioned that used in greases they are superior to any other known material under high temperature use. If used in tubing such as rubber tubing they are chemically resistant to almost anything, and do not soften at as low a temperature as does rubber. They are used in aircraft superchargers where high temperatures are the rule, are also being used for printing press rolls where hot inks are used, and as an insulator for wiring and transformers operating at high temperatures appear to be about perfect. A very recent development is the apparent ability of certain of the Silicons of high chlorine content to shed water. We may see this competing with some of the plastics for treatment of fabrics.

ALCOHOL PRODUCTION

During the war, the demand for alcohol was much greater than normal, and as a result of its new uses, a good deal of interest has been shown in the postwar uses and in manufacturing procedure.

The largest single new use during the war was as a raw material for synthetic rubber production. Alcohol comprised practically the only butadiene source (a constituent of rubber) until late in 1943 because of the slowness of the petroleum plants, but during 1944 it was largely diverted elsewhere as the petroleum plants came into production.

Another new use for alcohol — motor fuel — has long been a moot question. Alcohol does possess some advantages as a fuel over present-day fuels. The most recent data are from the Bureau of Standards and these conclusions only verify former knowledge that alcohol will raise power output of fuels of present quality.

In spite of the great interest, and perhaps promising possibilities, a warning note should be introduced here as concerns alcohol production at a low cost from waste materials. Carbohydrates are the basic material for industrial alcohol, and naturally cost is the factor which determines the particular carbohydrate to be used. Prior to the war molasses from Cuba, Puerto Rico and the Hawaiian Islands was the principal carbohydrate source, but during the war this situation was radically changed.

Corn wheat, wheat flour, wood wastes, or even artichokes are possible sources. The cost of alcohol during the war just completed was upwards of 30-35 cents per gallon, in some cases as high as 50 cents per gallon, compared with a peacetime cost of about 28 cents per gallon when obtained from molasses. With molasses at 6 cents per gallon the raw material cost is 15 cents and with corn at \$1.10 wet basis the raw material cost is about 20 cents per gallon. I do not have costs for wood, but before the war it was too high to compete with molasses under the then-known procedure. Another factor which may lessen the potentialities of alcohol as a motor fuel is the rapid advance in quality of motor fuels which will be discussed in a later section.

Just now, a plant is starting at Springfield, Oregon, to try out the alcohol process from wood waste. I sincerely hope it will be

successful, but until its costs are known correctly we cannot safely place too many hopes in that direction.

MEDICINALS

The wonders of sulfa drugs are well publicized, as are the results of the even more impressive penicillin — both the results of chemical research. The same may be said for DDT (Dichlorodiphenyltrichloroethane) and its use as a preventor of the plagues such as cholera and typhus may well be the most helpful and most humane development for the underfed and under-cared-for masses of humanity that has been made for many years. It is scarcely to be expected that all of these countries could get sulfa and penicillin at will as they have obtained DDT through our army, although this is to be wished for and worked for eventually.

Some of the less known developments are in the antiseptic and pain reducing fields. Here we have new products such as the quaternary ammonium salts which rival carbolic acid as an antiseptic, but which are not harmful to the skin. In this field, also are new anaesthetics such as the refinement of the drug curare which is used for relaxing patients under shock, making all such anaesthesia less dangerous. Again, a new drug has been found, less habit forming than morphine and is widely used with good results for relief of pain.

Not only has the use penicillin been vastly important in treatment of pneumonia, meningitis, dysentery, yellow fever, etc. but now it is thought to have possibilities as a preservative for foods. It is indicated that certain spores and active organisms of spores are more susceptible to penicillin than to any other drug found to date. Others are not affected so much however, and we must await further research before making any further statements in this regard.

GASOLINE

I don't know whether you have noticed it or not, but your gasoline is now better than it has ever been before, and this is just a start.

During the war this country built new aviation (100 octane) gasoline manufacturing facilities at a cost of about \$750,000,000, and these huge plants can now make this same super gasoline for you; and they will do it just as fast as our American competitive system and the automobile manufacturers force the issue.

The gasoline you were buying before the war in the regular grade was about 75 octane and in the ethyl grade was about 82 or 83. (Octane number is a scale of the tendency of the fuel to knock — the higher the number the better the fuel). Knocking is now what limits our automobile engine designers, so with these new war-built aviation plants, our cars can really be improved.

An increase of one octane number will give an increase over a short range in automobile efficiency from 1/2 to 1%, and it will not be

surprising with an average demand of about 70 octane before the war. In a few years the regular gasoline may reach 100 octane, and eventually may even go higher. New fuels were found during the war which gave equivalent performance to a 300 octane fuel. Your cars now are not built to use the new fuels, but it is not too optimistic to hope that our cars of the future may have compression ratios of 12 to 1 compared to about 7 to 1 now.

In terms of things we can all understand this may mean one of two things or a combination of both: —

1. It may mean that our automobile engines will remain of about their present size and gas consumption, but will have better performance.
2. It may mean that engines will have about the same performance but will be smaller — perhaps in the rear of the car or under the front wheels — and will have the added comfort which more room will give or —
3. It may mean a combination of smaller engines and more comfort, plus some added performance, too.

Perhaps the very best thing about this whole gasoline picture is that all these improvements can be made and have been made with better yields of gasoline from the crude oil, and while costs may not have been lower during the war, certainly the manufacturing costs will be lower because of this better efficiency eventually.

HOW WILL AIR TRANSPORTATION AFFECT WESTERN AGRICULTURE

H. Clement Keith, Perishable Traffic Representative
United Airlines, San Francisco, California

It would be presumptuous, indeed, for anyone at this stage of the game to claim to know the full answer to the question, "How will air transportation affect western agriculture?" The effects of air transportation on western agriculture will be so profound that only the future will tell the entire story.

Part of the answer is known though because three years ago United Air Lines, which is very much a part of the west, set up a section in its Air Cargo Department to work specifically on problems relating to the shipment of perishables. The reason for doing this was simple — an airline sells speed; and perishables, by their very nature, benefit more than any other class of commodities from the fastest possible transportation. United's experimental shipments ranged from a few packages of some commodities to series of full plane loads for others. To help in evaluating the benefits of air transportation on perishables United enlisted the aid of Professor Spencer Larsen of Wayne University of Detroit. Professor Larsen was aided by groups of home economists, produce men and laboratory technicians, which in turn checked samples for consumer acceptability, merchandising possibilities and sugar and vitamin content. Needless to

say, this work has produced some tremendously interesting results.

First and foremost, to my mind, it has been demonstrated that the use of air transportation will bring to eastern markets a level of quality in produce never before obtainable there.

When peaches, cherries, or tomatoes, for instance, can be moved two thousand miles or more to market overnight on a cool, clean, cushioned ride they can be allowed to really ripen before harvesting. They can be picked at the same stage you would harvest them in your own garden for use within a few hours. What a tremendous difference this makes! How could it be otherwise when you consider that peaches as commonly harvested for rail shipment contain only about thirty per cent of the sugar they would have had had they been allowed to ripen. And once the peach is picked it develops no more sugar.

Plums and some prunes that would normally be a deep red or purple at maturity are picked when possibly forty per cent of the surface begins to show a reddish tinge over a green background.

Apricots and nectarines are even better examples of fruits that will profit from air transportation. These two fruits are simply nothing if they are not full ripe. Airborne and railborne apricots have been compared by the taste panel at Wayne University, and the airborne apricots won on every count. The scoring was: Sweetness, 79-32; Juiciness, 75-43; and Texture, 80-43. The samplers declared that they never knew that the apricot was such a delicious fruit.

And, as you know, tomatoes are harvested for eastern shipment at a so-called "green wrap" stage, and green is certainly the right word. I was surprised during the past summer to find that in every large terminal market there are one or more businesses devoted solely to processing these green tomatoes into sort of a pseudo ripeness. The final product as offered for sale has a pinkish color, a decidedly mealy texture, and almost no flavor. It is practically inedible as far as I am concerned. These may seem like rather harsh words.

I was born and reared in California, and several times in the past I have been irritated (and I'll wager some of you have too) by the blythe assertion of an Easterner that irrigated fruits and vegetables have no taste. I knew that I had eaten western irrigated produce that could not be beaten for flavor or texture. I know now, however, that if I were to base my judgment solely on produce as sold in the East I would have to agree with this rather commonly accepted idea.

Western agriculture found long ago that the only way it could overcome the handicap of great distances from terminal markets was to put up a pack so uniformly fine in appearance that the premium price commanded would more than pay for the added transportation. However, because this produce had to be harvested so long before maturity, fine eating quality never had a place in the pack. As a matter of fact, our principal shipping varieties of many fruits and vegetables have been

hybridized with one main view; that was to find something that would color up even though very immature and at the same time stand up well for the ten to fourteen days required for rail transportation to the East.

Not long ago I was talking with a rather prominent peach grower. He is a hybridizer, too; and he was rather excited about a new, very early peach he had developed. I asked about the peach's eating quality; and I'm telling you, the scorn for my question wasn't too disguised when he replied, "What the heck do I care about eating quality; the peach is early and it colors up when it is still as hard as a baseball."

Now, I'm eager to prove to the people in the East that our produce can be delicious as well as good-looking. And air transportation is the tool that will do the job. I am hopeful that the Western Land Grant Colleges will assume a rightful position of leadership in the hybridization of varieties of fruits and vegetables developed primarily for fine eating quality.

Incidentally, consumers of airborne produce are going to benefit in another way that will be of great importance to them. Airborne produce harvested when mature has a much higher vitamin content -- almost twice as much in some cases as the same produce harvested for rail shipment. This was demonstrated over a year ago when some marked boxes of green-wrap tomatoes in a regular reefer load of tomatoes were shipped by rail from Edison, California to Detroit. Ten days later red, full-ripe tomatoes were picked from the same rows in the same field as those in the marked boxes. The ripe tomatoes were flown east by United to Detroit, and they arrived about the same time as those in the refrigerated car. A comparison of Vitamin C content revealed that the ratio was 25:14, in favor of the airborne tomatoes. It is interesting to note that almost the same ratio exists between field ripened tomatoes and eastern hothouse grown tomatoes.

Now, what of some of the other important vegetables that are shipped east; such as, peas, beans, sweetcorn, asparagus, and spinach. There is no question that there is a tremendous decline in the quality of these vegetables when they do not reach the dinner table until eight to fourteen days after they have been harvested. These same vegetables carried by air will really be garden fresh when they are served.

Possibly some of you are familiar with the work that is being done at Columbus, Ohio, cooperatively by the University of Ohio, the Atlantic and Pacific Food Stores, DuPont Cellophane, and others. This work is a large scale pre-packaging experiment using fresh fruits and vegetables. At the present time fruits and vegetables received by rail are packaged in a central warehouse and offered for sale in open-type, self-service, refrigerated show cases in six A & P Super Markets. The experiment has been highly successful. It has been proved that housewives appreciate produce that is cleaned, packaged, and ready for use, and they are willing to pay a premium for it. Moreover, housewives have found that when fruits and vegetables are packaged they need not worry about finding only leftovers in the produce department at the end of the day, because the quality is

uniformly good. They buy more fresh packaged produce, too, because they know their purchases will keep.

Of course, outside of this experiment this fact has been demonstrated a million times and more by the frozen food industry. The trend, then, is towards pre-packaged produce and the logical place for this packaging job is at origin, not destination. Dr. Charles Hauch of the University of Ohio states that eventually he hopes that the packaging will be done at the farm or packing plant, so that the substantial savings that accrue will benefit the farmer. I will say more about these savings later.

Air Freight will be the natural means of carrying packaged produce to market in order to avoid breakdown of the package or the contents. Progressive growers are already designing packages incorporating new or old trade marks with this thought in mind. You will be interested in knowing that the first fresh, shelled, packaged peas ever carried by United were shipped from Athena, Oregon, by Whitney Pea Packing Company.

This, then, is the first big job of air transportation, to move to markets perishables of a new high in quality.

Another important job will be to open vast new markets to producers of highly perishable foods that have heretofore been restricted to local consumption because they were not able to move long distances by rail. All kinds of berries are probably the most important members of this highly perishable group. This beautiful Pacific Northwest has earned a reputation for growing the country's finest berries.

For instance, some time ago I was told by a produce man that the strawberries grown in the vicinity of Hood River couldn't be beaten. I wasn't even able to discuss the situation with him because I, like millions of others, have never had the good fortune to eat Northwestern berries except when frozen or preserved in some other manner. Now the time has arrived when people all over the country can be made aware of the excellence of your berries. Our studies indicate that berries rank very near the top of the list of those commodities that will move in sizable volume by air. I am certain that as the use of air transportation becomes more and more widespread the acreage of many of Oregon's crops such as berries will increase materially.

By the way, baby chicks are in this list of highly perishable commodities that will use air transportation to reach new and distant markets. United carried one batch of chicks from Boston to San Francisco and then on a round trip up and down the coast from San Diego to Seattle and then back again to Boston with only normal mortality. The whole trip was completed well within the seventy-two hour period that is safe to move newly hatched chicks.

Of course avocados are not an Oregon crop, and yet I want to tell you a little about avocados as an example of the almost limitless ways in which crops can benefit from movement by air. Avocados ship well by rail; but, there are avocado shippers who are considering letting their

product take to the air. At the present time avocados are shipped hard with the hope that the retailer or consumer at the other end of the line will hold the fruit until it is soft and edible. Well, too often the consumer does not wait and attempts to use the fruit in a salad while it is still hard. You know the result — a customer for avocados is lost. Of course, at the other extreme, soft, overripe, fruit, darkened by bruising, may be sold with further loss of customers. Some avocado packers now feel that the ideal way to market their fruit is to ripen it at origin under controlled conditions to the desired stage of softness and then fly it east for consumption within a few days. This will provide the retailer, and ultimately the consumer, with bruise-free fruit in an ideal condition for use on any day desired.

Certain classes of perishable commodities, notably flowers, benefit in a particular way from air transportation. Cut flowers have a certain life expectancy, and the less of this time that is used up in transportation the better for the retail florist or his customers. Flowers flown to even the most distant markets are almost dew fresh when put on sale. This means that the buyer can enjoy his purchase for a much longer time. Western flower growers realized this fact years ago and made extensive use of air transportation even at pre-war Air Express rates. With the advent of Air Freight rates some eastern hothouse operators are moving their operations to the warmer climes of the West Coast. Proximity to market is no longer the most important consideration for a flower grower in selecting growing grounds. In its place soil types and climate become the most important factors.

Bulb growing has become a sizeable business in the Northwest. It is interesting to note that the bulb growers benefit in a particular way from Air Freight. A bulb grower is confronted every year with millions of gorgeous blooms, more or less a by-product of his bulb business. Local markets can absorb only a small part of these flowers, and the bulk of them must be left in the fields. Air transportation will enable these growers to harvest the blooms to be rushed to a flower-hungry East. This is an ideal example of the way speed can make money.

There are numerous other ways in which the grower and shipper will gain from the use of Air Freight. Scarcities of certain commodities often developed abruptly in large terminal markets. Air Freight will enable a shipper to quickly fill this demand at a profit. The necessity for diverting perishables in transit is eliminated when a shipper can select his market one day and put his product into that market the next day. And very important, the shipper who uses Air Freight will no longer be forced to gamble heavily on market conditions at destination.

Probably many of you are wondering by now as to the cost of Air Freight service for perishables. Agricultural shippers and receivers usually deal in car lots, so when they turn to air they will be interested in full planeloads that will move at charter rates. United Air Lines' present rate for charter service on perishables, airport to airport, is in the neighborhood of fifteen cents per ton mile. This means, roughly, fifteen cents per pound to Chicago or twenty cents per pound to New York.

Of course, small producers of highly specialized products may not be interested in rates for full planeloads. For small shipments they can use regular Air Freight at rates only slightly higher than charter rates. Now, you may say, "Certainly not all of the customers for western produce in the East are going to pay fifteen cents per pound premium for airborne quality." I will agree with you. I will even go further to say that there are some commodities that will not even move in appreciable quantities at fifteen cents per ton mile. We don't agree with the enthusiast who says that shortly all perishables moving from the West will fly, leaving the railroads high and dry. We do, however, expect our freight rates to tend to move downward as the speed and load-carrying ability of our equipment moves upward.

When we enter into a discussion of rates each commodity must be considered almost individually. At the outset we are certain that we will not normally carry such things as potatoes, most of the citrus fruits and apples. Of course, if a market is completely sold out even these commodities may fly to fill the demand. In spite of the fact that several planeloads of grapes have flown east, we do not feel that this commodity will continue to move in any sizeable volume at fifteen cents per ton mile. About the only thing that airborne grapes have to recommend them over railborne grapes are bright green, fresh appearing, stems; and brokers who handle grapes in the East say that this probably is worth a two - to four-cent premium, but this premium would not pay the Air Freight charge.

Our tests have shown, however, that the commodities that do benefit materially from air transportation find ready sale. Actually, airborne produce does not even compete with the railborne offerings. The quality of fruits, for instance, is so superior that for all practical purposes the commodity is entirely new.

Airborne field-ripened tomatoes are a more desirable item than the hothouse tomato, which now sells in tremendous tonnages in the East; and, incidentally, the airborne tomato can easily meet or beat the price of the hothouse commodity. The same is true of packaged, ready-to-use fresh vegetables. Their competition will be the frozen product, and we are sure that the garden freshness of the airborne product will appeal to most people; especially when offered at almost the same price.

Incidentally, growers of some commodities are going to profit in still another way in the use of Air Freight. Dr. Dorsey of the University of Illinois has shown that for every day that the fruit is left on the tree in a 40-acre block of peaches past the normal picking date for rail shipment the crop will increase by one carload. Ten days, then, would make a difference of ten carloads from a 40-acre block of peaches; and, bear in mind that these will not be ten cars of average quality peaches but ten cars of premium-priced, fully matured peaches suitable for shipment by air. I have checked this figure with western orchardists, and they tell me that the same figure would be true under western conditions. Growers of nearly all deciduous fruits and tomatoes will profit in this same way.

The things that will move, then, are those commodities whose quality because of immaturity is affected drastically by early harvest for rail shipment or that can not move long distances by rail. Many of the economies inherent in air transportation are not at first apparent to a shipper. United's research has shown, however, that there are major economies possible; one of the most important of these is the elimination of spoilage in transit. Spoilage due to breakdown from field-borne diseases is not covered by claims, and oftentimes in the past shippers have lost heavily due to such decay. An air trip of twelve to sixteen hours, in contrast to ten to fourteen days, will largely eliminate this type of trouble. Furthermore, shippers who use Air Freight will find that it is no longer necessary to maintain a crew to load and brace shipments such as is necessary when refrigerated cars are used. They will not have to buy lumber and nails to do this job of bracing. Light-weight wooden or fiberboard containers can be used for air shipment in place of heavy wooden boxes, because protection of the contents will not be of major importance in air shipments. The pre-packaging of vegetables will also eliminate a tremendous amount of weight at origin. Peas or lima beans that are shelled will weigh fifty per cent less than the same articles as shipped in the pod. Almost seventy per cent of the gross weight of a head of cauliflower is in the jacket surrounding the curd. Part of this jacket is trimmed off by the retailer and the remainder is thrown away as waste by the housewife. When Air Freight is used the curd can be removed from the jacket at origin and packaged either whole or cubed to take advantage of this great saving in weight. Huge tonnages of ice will no longer need to be transported when produce is flown to market. And every one of these economies is going to reflect on the final price that the consumer is going to pay.

And now what about the retailers -- the men who will place this airborne produce before the public? Their attitude can best be summarized by an article which appeared recently in the "National Grocers Bulletin," telling something of the three major improvements going on in produce retailing.

The first of these improvements is the merchandising of perishables by self-service. The second is the growth of packaging in consumer units. And the third has to do with air transportation. And I quote, "Regardless of the cost, airborne vegetables will find a market limited at first but likely to grow; maybe fast, on their superior quality and upon rate reductions that the air transport companies will eventually make." Wide-awake merchandisers in the East are consequently aware of these developments and are anxious to go along with them.

Shippers have often asked me whether or not their high quality airborne perishables would receive the handling they deserve in eastern markets; and I can assure you that the attitude of retailers there will see that the merchandise is handled properly. It is interesting that these progressive retailers are not worried about how they will handle the produce. They are rather wondering whether or not they can get the very high quality that they desire. As a matter of fact, some time ago I had occasion to attend a meeting of the National Retail Growers Association

in the East; and when they learned that I was from California they asked me directly whether or not there were grower-shippers in the state who would be able and willing to give them the high quality fruit and vegetables they would like to handle in their best markets. I assured them that this interest did exist here; and I told them of a conversation I had had previously with a prominent fruit grower in the West. This one particular grower had told me that as soon as possible he would like to start shipping his fanciest fruit by Air Freight. He had at that time made his plans for what he intended to do as soon as he learned that the planes were available for freight service. He said that if he started early enough in the spring he could set aside a good-sized block of Hale peaches, and by proper thinning he could make sure that the bulk of the crop would run to twelve-ounce peaches or better and he knew that he could put into the eastern markets fruit such as had never been seen there before. When I pictured a really ripe Hale peach weighing three-fourths of a pound or better I had to agree with him that it would be entirely new in the East.

We have been told in just so many words by eastern merchants that they can sell planeload after planeload of airborne perishables no matter what the price, as long as the quality is there.

Throughout this discussion I have frequently used the word "quality"—high quality, airborne quality, supreme quality, etc. Quality must be important to merit being mentioned so many times. Indeed, it is important! To our minds it is the key to the entire future for airborne produce. We know, for instance, that the housewife in Chicago will gladly pay fifteen cents per pound extra for airborne western peaches; and from past experiences we know that she will come back and pay the premium again and be fully satisfied with her purchases, providing the quality is there. On the other hand, we realize full well that if she pays this fifteen cents premium and does not get the value she deserves she will not only refuse to buy again but will no doubt tell her neighbors to avoid that article. Produce men who buy a shipment F. O. B. and get hurt will hesitate a long time before taking any further adventures with airborne merchandise.

We in United have a selfish interest in the subject of quality. We are interested in the long-term aspects of the Air Freight business and not in the temporary publicity that would result from jumping from one town to another with planeloads of produce of ordinary or questionable quality. Moreover, the grower-shippers who pioneer in the shipment of perishables by air will be anxious to see that in the early stages of the game markets are not hurt by unscrupulous shippers. Of course, after the business is once firmly established the mere force of competition will tend to squeeze out shippers who try to ship second-rate merchandise. The trade marks and brands will be established, and receivers will come to depend on those shippers whose pack is uniformly fine. It is now, and in the immediate future, however, that quality is so necessary because everyone knows that first impressions are important.

We feel that the most satisfactory way of handling the question of quality would be to have the United States Department of Agriculture set up quality standards for airborne produce. Possibly these standards could be optional, but if a receiver in the East wanted to be sure of obtaining

highest quality he could specify then that the shipment should meet the U. S. Standards for Airborne Quality and in turn the shipper could have the load certified to by a federal-state inspector. Happily, members of the U. S. Department of Agriculture are in accord with us on this matter. Further regulation of agricultural shipments might seem onerous to some people; however, such standardization laws could be optional, and in addition to that the progressive growers whom the standardization laws would protect would undoubtedly be constantly putting up a pack that would easily meet the standards.

This is the story to the present, then! There are shippers here in the West who are ready and willing to ship the finest fresh fruits and vegetables, and there are sizeable markets awaiting these shipments in all of the large terminals; and now Air Freight will provide the transportation at a rate that will do the job. We are standing on the threshold of exciting times for both aviation and agriculture.

The development of our West attests to the fact that there has never been a lack of men of vision here. And forward looking agriculturists are now gearing their operations for the age of flight. Your Willamette Valley has long been famous as a producing section. New sections such as the Owyhee Project in Malheur County, Oregon, will in time become equally famous and with possibly even greater diversity of crops. Other fertile valleys heretofore inaccessible or too distant from markets are being leveled and made ready to produce more food. No place is inaccessible as long as a plane can land or a glider can be pulled from the ground, because the atmosphere is universal.

I can best close by telling you once more that the effects of air transportation on western agriculture will be so profound that only the future will tell the whole story.

HYDROELECTRIC POWER AS A FACTOR IN THE INDUSTRIAL DEVELOPMENT OF THE PACIFIC NORTHWEST

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At a time like this when national affairs appear to be so full of uncertainties and doubt, it is reassuring to meet with groups such as this to try to arrive at a realistic appraisal of our problems. The cumulative effect of such group analysis cannot help but lead to the understanding of which Dr. Strand speaks in his foreward to your program.

Here in the Northwest, our basic economic situation is probably better than in most parts of the country and is undoubtedly far ahead of most other corners of the world. For this reason we have a proportionately greater responsibility than our neighbors in contributing to the restoration of economic order and the building of a lasting peace.

Before we can fulfill this responsibility, however, there are some problems right here at home that urgently need solving. Actually, although we have made tremendous gains in recent years, the Northwest faces an extremely critical period.

Our housing situation is desperate. It will require the full productive capacity of the building industry to come anywhere near meeting the heavy demands for living and working space with which we are now confronted. The question of wages versus cost of living must be reconciled without delay. And finally, the unemployment problem, which grows more serious daily, must be attacked vigorously.

When we have found the answers to these problems we can begin to look toward the broader fields of development. We are leaving behind us a paradoxical combination of destruction and prosperity. Until recently we have experienced a time of unprecedented production and accompanying all-time highs in industry, employment and income.

By far the greatest continuing problem we will have to face is the maintenance of full employment. Full employment means steady and growing income. It is the indispensable basis for production, enterprise and investment. We must not let the present unrest in labor obscure these facts for a single moment.

Throughout the war years, the Northwest has built for itself an enviable labor pool. In considering the question of employment, we must not look upon this labor pool as a menace — it is one of the greatest physical assets we have, because the families represented in this pool mean markets — home markets — for the products of agriculture and industry.

In the past, the Northwest, and particularly Oregon, has been regarded as having primarily an agricultural economy. We are looking ahead toward a period of industrial expansion, but this does not mean that agriculture will become any less important. Our opportunity lies in a parallel strengthening of both types of enterprise. This can only be accomplished with and by people — and people mean purchasing power.

Briefly, the present employment situation looks something like this: in-migration, both prewar and wartime, has been heavy; postwar out-migration is relatively light. The return of war veterans to their homes here is already great, and many veterans who have seen the west coast for the first time during their enlistment are planning to stay here. G. I. preference for west coast schools and colleges is also high — one authority estimates that about 75,000 are planning to register in California colleges alone.

The significance of all this is that Pacific Coast population is already running ahead of immediate employment opportunities. But it must be constantly remembered that the Pacific Coast population is not running ahead of its basic resources. Our urgent need, then, is quicker development of our major basic resources projects. We need quick action in the development of industry and enterprise, both public and private, if we are

to solve the relatively short-range unemployment problem and still retain the long-range benefits from this human resource pool. Once the bottlenecks of housing and building, of unemployment and of stabilizing production and income are broken, we can begin to look forward to long-range developmental planning.

To unlock the opportunities for development which we know to exist here for large and small business, for public and private enterprise, I think we should look to investment as the nearest thing to a key. This applies to the budgeting of public programs and public aids as well as it does to private programs with private financing and underwriting. Encouragement of constructive investment means that we must concentrate upon a basic and coordinated resources conservation and development program covering land, soil, water, minerals, agriculture, forests, fisheries, recreation — in fact, everything that will lead to wider development of industries and services.

The interest of the Bonneville Power Administration quite naturally centers on the water resources aspects of such a program. Our direct concern is with power installations in the various multiple-purpose stream development projects in the Columbia Basin. The immediate function of Bonneville has to do with power transmission and power marketing from a power utilization and sales point of view. Therefore, Bonneville is concerned with the resources, industrial and social development of its entire market area and hence with the broad development of the Pacific Northwest.

On the basis of this interest, Bonneville has strongly favored coordinated regional planning and programming of development. It has favored the carrying out of a unified program for the development of the Columbia river system.

Two years ago such a comprehensive program was recommended by the five governors of the Columbia Basin states. The Bonneville Power Administration endorsed that program then and will continue to do so until a more comprehensive plan appears.

The immediate postwar effects of this program of the Northwest States Development Association represent an investment of about \$600,000,000 to \$700,000,000, including power transmission lines. It would result in an increase in crop acreage from about 16,000,000 to 17,000,000 acres and irrigated lands from about 3-1/2 to approximately 4-1/2 million acres. It would increase power capacity from about two million to some 3-1/2 million kilowatts. It was estimated that this great public investment should induce at least an equal added investment in land improvements, plant and communities, bringing a total increase in real wealth of about 1-1/2 billion dollars.

Such a program should provide more than 100,000 new and continuing jobs in agriculture, industry and service. It should also provide for an increase in the annual income of the region of at least \$200,000,000. From a public investment point of view, it was estimated that such a

program should provide directly and indirectly, both here and outside of the region, some 150,000 jobs, depending, of course, upon the rate of construction.

This is by no means a make-work program, but one of constructive asset-building public works necessary to the full development of the region.

The Bonneville Power Administration's interest in a program of this type lies in its direct relation to the basic objectives which have guided our operation from the beginning. I would like to restate those objectives briefly:

First, to develop and utilize power as a tool for the production of taxable wealth. New wealth-creating activities adding to the taxable wealth of the community are the very foundation for solvent national government. If we are going to use power as a tool to accomplish the fundamental objective of creating wealth, a low-cost policy is of course essential.

With the inexhaustible supply of power we have here in the Northwest, sold at the right price — and I firmly believe that price is the key to the whole thing — there is no reason in the world why we cannot build far greater regional wealth and consequent greater national wealth. On this basis we can have the necessary diversification of processes and production and the manufacturing activity which will bring out the wealth of the region.

Our second objective is the creation of new jobs. By supplying low-cost power as a medium for developing the resources of the region, the Bonneville Power Administration as a public enterprise provides a basic ingredient for establishing a sound economic base for private enterprise. Private enterprise, thus encouraged to produce more goods at less cost, can create an increasing number of jobs.

A third and highly important objective is the matter of paying off the government's investment here in the Northwest. The multiple-purpose river projects and the federal transmission system we are building represent a tremendous sum of money which must be returned to the people of this country.

In the next few weeks we will present to the Secretary of the Interior a financial report containing certified financial statements prepared by independent commercial auditors which will show the results of operations from the time the project was begun to June 30, 1945, for the federal government's Columbia river power system, including Bonneville dam, Grand Coulee dam, and the transmission system of the Bonneville Power Administration. In addition, we have prepared a pay-out report showing how the administration proposes to provide for complete repayment to the United States Treasury for the costs of the developmental program of the federal government in the Northwest.

That this can be done at the lowest wholesale rate for power in America — \$17.50 per kilowatt-year — has been demonstrated. By the end

of the calendar year 1944, after payment of all current power costs, operation and maintenance expenses, depreciation, interest and amortization on the federal investment in the Bonneville - Grand Coulee transmission system, and power facilities at the two Columbia river plants, our net revenues amounted to more than 12 million dollars. All we have to do is keep the generators turning to make the \$17.50 rate pay out.

I might add at this point that final determination of the cost allocation for the construction and operation of Coulee dam has been made, and revenues from the sale of power will meet \$633,960,585 of the total reimbursable cost of \$781,304,085. This includes all construction costs, interest on the portion allocated to power, replacement costs over the repayment period, and operation and maintenance expenses.

In other words, revenues from the sale of power developed at Grand Coulee dam will repay to the federal treasury not only all investment in the power facilities at the dam, plus interest on the power investment, but also a very substantial part of the investment in the irrigation facilities.

As a result of the allocation and repayment studies we have completed in cooperation with the Bureau of Reclamation, it has been determined that at present rates, revenues from Bonneville - Grand Coulee power will be more than sufficient to meet all financial requirements and assure repayment to the federal government of the full investment in the Grand Coulee project — provided we can sell the power, and that is a sales problem. We have a real promotional job to do in the Northwest, promoting the uses of power for the development of the natural resources that are here. Not only does power pay a major part of the costs of irrigation, but the low rates attract new industries to support an increased population which, in turn, provides new markets for the products of the newly irrigated land. Thus power and irrigation are not opposing developments. They complement each other.

We often hear claims that power and reclamation projects do not fit together — when you need water for reclamation you can't use it for power. That is not true in the Northwest. We have an unusual watershed in the Columbia basin. The heaviest runoff comes at the time of the year that water is needed for reclamation, and it is available in unlimited quantities during the peak power season. Consequently, it is possible for both uses to be served at a much lower cost here than in other regions. Such a rich natural resource is not available to the same extent in any other part of the country.

Our fourth objective is to work for a continually rising standard of living for the people of the Northwest. It is our belief that through the distribution of abundant low-cost hydroelectric power throughout the region, living can become more enjoyable and work be made easier for farm dwellers, as well as city dwellers. When manpower and materials are available for the construction of additional rural lines, there will be no excuse for any farm in the Northwest to be without the benefits of cheap electric power. For all of the consumers of the region the new products, which mean improved

standards of living, can be made available at reasonable prices, if low-cost power is distributed to the industries operating here.

The Bonneville Power Administration is a transmission agency whose job is to market this power. A great deal of criticism arises over government construction of transmission lines. According to a certain type of thinking, power should be sold at the dam to anyone who is willing to come and get it — and that any other system interferes with free private enterprise. Actually, private enterprise could not afford to construct a huge 230,000-volt transmission grid system such as we have here, but it can take advantage of that power when it is brought to the place where it will be used. It seems to me that there is a very definite parallel between the canals which the government is building to carry water away from back of the dams to the areas to be irrigated and the high-voltage transmission lines which the government is building to carry power to those parts of the country where it is needed most and will do the most good.

Low-cost power in large quantities, available only from multiple-purpose development of our rivers, is the key to better balanced and continued economic progress in the region.

In heavy chemical and metallurgical industrial processes, low-cost power is practically a raw material ingredient. With the rapid strides in chemistry and metallurgy, power is becoming an increasingly important factor in industrial development. It is playing an ever larger role in the services of commerce and transportation. Its uses in farm, home and community life are expanding more rapidly than ever before since the discovery of electricity.

In order to serve these purposes effectively, it is necessary not only to develop our power resources but to provide the transmission facilities required to make the power available to the greatest number of people. Creation of a transmission grid system to carry the power of the Columbia river throughout the Pacific Northwest has been one of our prime responsibilities.

Let me illustrate what this transmission system does. The transmission line, for instance, from Grand Coulee dam to Seattle performs the function of lifting the output of two generators out of the dam and placing it at the disposal of Seattle. It is a mass power transportation system and you need that kind of a system if you are going to transport power in any such quantities.

Full development of the Pacific Northwest's vast power resources requires multiple-purpose programs and financial resources far beyond the capabilities of private interests. Since the availability of power in large quantities and at low cost plays such a large part in developing the market, our power resources must be developed a step ahead of the market. We must not lose sight of these fundamental concepts if we expect to utilize our power resources to the fullest extent in solving our regional production, income and employment problems.

Aside from its role as a vital factor in economic progress, hydroelectric power produced at multiple-purpose river projects has another very important function in regional development. It does more than any other product to make resources development pay out. Not only does it pay the cost of investment in power facilities, but it helps substantially to repay the cost of land reclamation, thus helping to provide new jobs and new opportunities for new people in the Northwest.

One of the major problems confronting us during the period of transition from a wartime to a peacetime economy is the job of selling the power already developed in the Northwest. During the war years, the power from Bonneville and Grand Coulee dams has, to a large extent, sold itself. We feel that a peacetime market exists for all of the power that can be developed at present Columbia river projects and others approved by Congress for construction in the near future. But it will take the coordinated efforts of government, industry and business to develop these latent markets.

A large portion of our potential power market lies in the industrial field. The success of our sales program depends upon the expansion of industry in the Pacific Northwest; conversely, industrial expansion depends to a large extent upon the availability of power near the sources of raw materials.

During recent years, light metal production has been perhaps the most spectacular industrial development. Yet, without minimizing its importance, I think that it may be considered in the long range, not the most outstanding. There should be a growth in light metal fabrication for a multiplicity of uses. Light metals are ideally suited for those purposes where weight is an objection and ease of shaping an advantage. Transportation, in all of its various phases, affords excellent opportunities for light metals in fabrication.

With new developments in wood chemistry and the utilization of wood wastes, forest products industries give promise of becoming even more important than in the past.

Other industries which have come into the Northwest recently include calcium carbide, ferroalloys, glass manufacture, glucose and starch production, dehydration of fruits and vegetables, as well as many other comparatively small, yet in the aggregate, important developments. All of these are adding to the taxable wealth of the region.

Technical research is one of the foundation stones of industrial development. We are interested deeply in an expanded program of research, in experimentation, in demonstration work. Our primary interest lies, of course, in the power utilization fields -- in industry, in home, farm, commerce and transportation uses of power. We expect to carry forward some of the research that falls in our specialized field, but we are interested, as I know you are, in having other agencies conduct adequate research programs in broader fields. We recognize the present and latent capabilities of many federal, state, educational and industrial research

agencies. We want to assist in work of direct interest to power market development. Toward this end we have made arrangements with Northwest colleges and universities for cooperative research programs. Many of these projects deal with utilization of power in the field of agriculture and are designed to promote a balanced development of agriculture and industry in the Pacific Northwest.

I am sure that all of you will agree that such a balanced development is of paramount importance to the future economic stability of the Pacific Northwest and of the nation. Certainly, we cannot expect agriculture alone to provide all of the necessary jobs for the Northwest's returning service men and displaced war workers. Only through development of new employment opportunities in industry can we hope to maintain full employment in the region.

As I see the picture, the Pacific Northwest faces three principal problems which must be overcome before its potential greatness as a producing region can be attained.

The first of these — lack of factual information about the region's raw materials — can be corrected by an expanded research program. For instance, we need much more information about a number of critical materials which are needed for future industrial expansion. Limestone is one, sulphur is another; and we must learn much more about coal and other sources of carbon. I could mention many others. Until we have better information as to what we have and the quantities available, we can't expect great industrial expansion in this region.

A second problem is the Northwest's archaic freight rate structure, which is a serious deterrent to development of manufacturing industries and, consequently, is working to the disadvantage of western development.

Our transportation conditions in general must be improved with an accompanying adjustment in the freight rate pattern for the region. The existing general body of rates applicable in the Northwest was developed to facilitate the shipment eastward of raw materials and semi-finished commodities, and the movement westward of manufactured goods. Freight rates which were all right 15 or 20 years ago when they were established no longer fit our expanded economy. Some of these artificial economic barriers are holding up our entire developmental program. If development for industry lags in the Northwest, industry will locate in some other region.

The third major problem confronting the Pacific Northwest is the lack of population for markets. If we can retain our wartime population gains by providing full employment, this difficulty will be alleviated to some extent, and we can look forward to a balanced development of industry and agriculture solidly based on the foundation of expanded local markets.

This entire program of resources development work, using power as a tool for the development of new taxable wealth, is essentially a

program to take care of an expanding population -- to relieve congested areas in other parts of the country. With new population comes industrial expansion. And industrial expansion means new markets for agriculture. Once the balance becomes the rule, the Northwest can look forward to a glorious future.

THE EXPANDING PRODUCTIVE POTENTIAL OF WESTERN AGRICULTURE 1/

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Everyone has seen pictures of a returning soldier trying to wear his prewar clothes -- sleeves too short, coat won't button in front, cuffs above the ankles and all the rest of it. We suddenly realize that he has grown. Western agriculture is just like the returning soldier; it, too, has grown. Gradually, over the years, western agriculture has expanded, and once in a while we wake up to discover that our old ideas about it are wrong. Growth for the soldier requires an expenditure for new clothes; growth for western agriculture isn't entirely painless and free from problems. The real question we are now facing is, has the growth in western agriculture stopped or will it continue? How much, if any, will western agricultural output increase? What effect will more irrigation have upon agricultural output? What about markets? What effect will the growth of western population have upon markets for western agricultural commodities?

History of Western Agriculture 2/

What has been the history of western agriculture? Early settlers in the West began to produce their own food at an early date; with the difficult, costly, and uncertain transportation of those days, they often had to raise what they ate, if they were going to eat. The Spanish in California, the Mormons in Utah, and early settlers in the Northwest all faced this necessity. Commercial agriculture, or production for sale, generally began with the raising of range livestock. Hides, tallow, and wool could be shipped relatively long distances, because of their lack of perishability and high value in relation to bulk. With the coming of the railroads, live animals could be shipped eastward. Next in the development of commercial agriculture was ordinarily grain farming. The Central Valley of California, the Palouse and other northwestern areas, and the Great Plains had the greatest expansion along this line. Partly contemporaneously but mostly later came the growth of general irrigated farming. The possibilities of fruit production began to be explored at a fairly early period. At first the markets were only local and for dried fruits. The introduction and improvement of refrigerated transportation,

1/ This paper is based upon a more detailed report, "Longterm Outlook for Western Agriculture - General Trends in Agricultural Land Use, Production, and Demand," by Marion Clawson and Wendell Calhoun, shortly to be released by the Bureau of Agricultural Economics, Berkeley, California.

2/ As used throughout this paper, "western" means the 11 states from Montana, Wyoming, Colorado, and New Mexico to the Pacific Ocean.

of canning, and of more recent processes greatly stimulated fruit production. Of more recent origin has been the great growth in rather specialized dairy production and in highly specialized production of truck crops or vegetables. To these broad changes must be added the introduction and expansion of sugar beets, cotton, and other crops.

Agricultural production in the West has increased 115 percent since 1910. In the 1910-14 period, the average annual cash farm income, in terms of 1926 dollars, was slightly over \$1 billion for the 11 Western States (table 1). By 1939-43, even when measured in 1926 dollars, it had risen to \$2 $\frac{1}{4}$ billion, or an increase of 115 percent. The increase in California was nearly twice as rapid as in the rest of the region, and by 1939-43, cash farm income in California was 83 percent as large as in the other 10 states of the West. While annual cash farm income from all commodities was doubling in the West, the changes in different groups of commodities was by no means uniform. Income from sale of vegetables increased nearly 4 times; "other livestock," which is chiefly dairying and poultry, increased 3 times. On the other hand, income from sale of meat animals rose only 60 percent and from "other crops" - wheat, cotton, potatoes, sugar beets, etc. - rose only 72 percent. These shifts in source of cash farm income clearly indicate a trend toward more intensive types of farm production - dairying instead of beef cattle, vegetables and fruits instead of alfalfa and irrigated general crops, etc.

How do these changes in amount and make-up of cash farm income in the West compare with the changes in acreages of various classes of land during the same period? When the various types of land are converted to a common denominator on the basis of their ability to produce feed for livestock, the increase in productive capacity since 1910 of all types of land has been about 13 percent. An increase of about 50 percent in area of irrigated land, plus a slight increase in area of nonirrigated cropland harvested, plus no increase but possibly some decrease in area and productivity of range land, totals to only the moderate increase of 13 percent. The increase of over 100 percent in cash farm income has thus come predominantly from greater and more valuable production per acre. Only a slightly larger area of land has been used more fully, and for more intensive crops, so that total output has risen greatly. The upward trend in the West and particularly on the Pacific Coast greatly exceeds the trend elsewhere in the United States. 1/

Markets for Western Agricultural Commodities

Western agricultural commodities are sold on regional (or local) and on national markets. What is the market outlook for western agricultural products?

Much of Western agricultural production consists of "specialties" - crops not grown at all elsewhere in the United States, or grown only in

1/ See forthcoming report, "Farm Production in War and Peace," by Glen T. Barton and Martin R. Cooper, Bureau of Agricultural Economics, mimeographed.

Table 1. - Average annual deflated cash farm income,
1910-14 and 1939-43, in the 11 Western States,
by source of income

Commodity group	:Average annual deflated cash farm: :income (million dollars, at 1926 :Percentage increase :price level) : 1910-14 to : 1910-14 : 1939-43 : 1939-43		
Fruits and nuts	170.2	423.5	149
Vegetables	71.2	264.5	271
Other crops	310.2	533.0	72
Meat animals	319.3	512.7	61
Other livestock	173.3	516.5	198
Total	1044.2	2250.2	115

limited volume elsewhere. Hops, apricots, pears, filberts, walnuts, olives, figs, avocados, artichokes, and many others could be mentioned in this connection. When consideration is given to the season of production, several other crops for certain seasonal markets fall into this group. Though fresh peas are grown widely in the United States, fresh peas for winter market are grown primarily in the West, for instance. With only minor exceptions, western production far exceeds western consumption of these specialty commodities. Their chief market is usually in the Midwest and East, 2000 miles or more from the area of production. Farm prices of these commodities depend on prices received in large eastern cities, minus relatively high freight and marketing costs. A growth in western population means an expanded local market for "specialties", but it does not free producers from dependence on the distant market.

"Common" agricultural commodities are grown in many parts of the United States other than the West. They include not only the staple products such as wheat, corn, oats, barley, cotton, cattle, and hogs, but also such things as apples and canning peas which are grown in several other areas. Obviously, there is no sharp line separating "specialty" from "common" products; if 75 percent or more of national production is in the West, the commodity is probably a specialty; if 25 percent or less, probably a common one. Intermediately, there may be difference of opinion as to its proper classification.

Common commodities may be subdivided into (1) "deficit" commodities, the western production of which is less than western consumption; (2) "surplus" commodities, the western production of which clearly exceeds western consumption; and (3) "self-sufficient" commodities, for which western production and consumption are in approximate balance. Examples

are: deficit commodities, hogs; surplus, potatoes; self-sufficient, dairy products as a group. The region has a small deficit of dairy products, but the margin is small and the small deficit could be transformed into a small surplus by expansion of western production. Because common commodities are produced in large volume elsewhere in the United States, western producers are in competition with producers elsewhere. This is true on both regional and national markets. If western consumption exceeds western production, the difference is easily shipped in. The price to western farmers is the same as the price to midwestern farmers plus freight and other costs. A growth in western population means more shipments into the region, with little or no increase in price to western producers. If western production exceeds western consumption, the balance is shipped out and competes on eastern markets with production from other areas. The price to western farmers is the eastern city price less freight and other costs of getting the product there. If population grows in the West, more of the product is consumed in the region and less shipped out, but the price is likely to change but little as a result of western population growth. Of course, if population change were very great, a surplus commodity might be converted into a deficit one - this has actually happened in the case of eggs in California. Relatively small changes in western production or western consumption may shift the approximately self-sufficient common commodities from the slightly surplus to the slightly deficit status, or vice-versa, with consequent rather substantial changes in western price.

The growth of Western population has provided a greatly expanded market for western agricultural products with consequent favorable effects on western farm prices. Population expanded from 4 million in 1900 to nearly 14 million in 1940, and to about 16 million now. Population growth was rapid all over the region, up to 1920, although not at exactly equal rates in all states. From 1920 to 1940, the rate of population growth slowed down in all parts of the region, but was maintained at a far higher level in California than elsewhere. From 1900 to 1920, population in California increased 131 percent, and from 1920 to 1940, 102 percent, or at roughly three-fourths of the earlier rate. In contrast, only two other western states had a rate of population growth from 1920 to 1940 as much as half of their 1900-1920 rate, and for most states the rate was less than one-third as great. Since 1940, the rate of population growth has been greater in California than elsewhere. As a result of the higher and better-sustained rate of population growth in California, more than half of the people in the West are now in that state. Within California, population growth has been especially rapid in the southern part of the state.

Population growth in the West has affected the market for western agricultural products. Beef cattle from Nevada, Utah, and Arizona once moved eastward; now they go westward. The growth of Los Angeles has been reflected in an ever-widening circle from which beef moved westward rather than eastward; now, a substantial number of cattle from western Texas move to southern California. Western dairy production has increased over one-third in the past 20 years, and yet western consumption has expanded equally rapidly, so that with minor exceptions, western dairymen have enjoyed a midwestern butter price plus freight.

The outlook is for continued western population growth. A population of about 17 million by 1950 and of about 18½ million by 1960 is probable for the 11 western states. This will represent increases of about 22 and about 33 percent, respectively, over 1940. Roughly speaking, the western market for western agricultural commodities will expand proportionately. With the prospect of more rapid population growth in California than in the rest of the region as a whole, the California market will become increasingly important for western agricultural products.

What about the national market? National population growth has been substantial over the past several decades, and further growth will occur even though it is generally agreed that we are gradually approaching a stationary population. While national population growth has affected the national market for western agricultural commodities, other factors have perhaps been more important. Improved transportation and new processing methods have surely been factors. So have changed dietary standards and food tastes of the population, toward more fruits and vegetables in the diet. The West can expect some further growth in demand, due to these factors. At the same time, the possibilities of stiffer competition from other parts of the nation should be recognized. If quick-freezing makes peas or other commodities, almost or fully equal in quality to the fresh product, available throughout the year, the price of out-of-season fresh products will surely decline. Improved transportation and processing always widens the market, and exposes previously sheltered producers to the cold blast of competition.

Irrigation as a Factor in Western Agricultural Development

The area of irrigated land in the West has doubled since 1900; the figures are as follows:

1900	9 million acres
1910	13 " "
1920	17½ " "
1930	17½ " "
1940	18½ " "

In contrast, the area and productivity of grazing land has not increased and may have decreased since it was first fully used, and changes in area of nonirrigated cropland have been relatively small.

These increases in irrigation helped to make possible the increased agricultural production previously mentioned. The intensive crops are nearly all grown on irrigated land. However, irrigated acreage is only 2½ percent of the total land area of the West but about one-third of the cropland. The only commodity produced by range land, nonirrigated cropland, and irrigated land is feed for livestock. On the basis of their ability to produce feed, the range lands of the West are equivalent to perhaps 23 million acres of irrigated land, and the nonirrigated croplands to perhaps 11 million acres of irrigated land. On this basis, irrigated lands have about 35 percent of the agricultural productive capacity of the West. On the basis of the value of agricultural commodities produced,

irrigation is responsible for slightly over half of the total. These relationships vary greatly by states. In Oregon and Washington, the relatively large acreages of nonirrigated cropland west of the Cascades, plus the large dry-farm wheat production, result in a small part of the total from irrigation. In some other western states, irrigation is much more important.

Is there an opportunity to expand irrigation in the West? The Bureau of Reclamation says so, and has submitted a large scale program to Congress. 1/ Irrigation of 6 3/4 million acres of new land plus supplemental supply of water to 9 1/2 million acres within 10 or 12 years is held out as a reasonable estimate of maximum development within that period. Actual development will almost surely be less; the necessity of getting appropriations, unavoidable delays in construction, perhaps lack of sufficient settlers with necessary capital or credit, and some lands unsuitable for irrigation within projects will all combine to reduce the acreage that will actually be irrigated by some date. The list of proposed developments contains several large projects and many small ones. The Columbia Basin Project will ultimately include about 1 million acres; it could all be irrigated within 10 years, but may take 25 years or more to get into full production. The Mountain Home project in southern Idaho will include over 200,000 acres of new land, and may be among the early large projects. In Oregon the Deschutes and Willamette projects will add considerably to the agricultural productive capacity. The presently authorized Central Valley Project will bring in about one-half million acres of new land. Ultimate developments in that area will add something like 3 million acres to the total irrigated area; as much as 1 million of this might be in production by 1960. A large project is under consideration in Arizona. These are equalled or over-shadowed by the scores of small projects within the region. Outside of the 11 Western States large developments are projected in North and South Dakota.

Considering all factors, I estimate that irrigation of new land and provision of supplementary water supply will be equal in productivity to about 1 million acres of irrigated land by 1950 and to about 3 million acres by 1960. These amounts, if realized, would equal 5 and 16 percent, respectively, of the area irrigated in 1940. However, on the basis of equivalent productivity of all types of land in the 11 Western States, they equal 2 and 6 percent. While I view these as probable developments, others might estimate other acreages as more probable, and anyone will concede that actual development may be greater or less, depending upon the factors previously enumerated.

Summary of Production and Market Probabilities

The outstanding fact in western agricultural history has been the greatly increased output from an only moderately expanded acreage. As

1/ Hearings before the Special Committee on Postwar Economic Policy and Planning, U.S. Senate, 78th Congress, 2nd Session, pursuant to Senate Resolution 102. Part 5, Reclamation, Irrigation and Power Projects, June 6, 1944.

pointed out earlier, the annual value of agricultural production (in 1926 dollars) in the 11 western states rose from about \$1 billion in 1910-14 to about \$2 $\frac{1}{4}$ billion in 1939-43; at the same time, the acreage of all agricultural land rose from the equivalent of about 47 million acres of irrigated land to the equivalent of about 52 $\frac{1}{2}$ million acres of irrigated land. Reduced to a per acre basis, agricultural production rose from about \$21 in 1910 to about \$39 in 1940, or an 86 percent increase in 30 years; the rise was rather consistent, year by year. The changes which have occurred in farming in the Vale and Owyhee irrigation projects since they were first brought into irrigation illustrate this trend toward more intensive production from the same area of land. In California, the increase in production per acre was more marked - from about \$58 in 1910 to about \$122 in 1940, or an increase of 110 percent in the same period.

What factors are responsible for these trends? First and foremost, they are due to a shift toward more intensive lines of agricultural production - more dairy cattle in relation to beef cattle, more truck crops in relation to hay acreage, more fruit production, and similar changes which employ more people and turn out more product from the same area of cropland. This trend has been particularly noticeable in the better farming areas. Greater mechanization has released land to produce crops for sale which previously had been used to produce feed for workstock. Yields of several crops have increased; greater maturity in fruit trees has resulted in higher fruit yields, for instance.

Has this trend toward more output per acre ceased or even slackened off? Not yet, and there is reason to believe that the factors responsible for the trend in the past will continue in the future, though probably not with the same force. If this trend should continue at the past rate, by 1960 western agricultural production would be 50 percent above 1940 agricultural production, due to this one factor alone. About one-fourth of this increase above 1940 has already occurred. Earlier, I estimated that by 1960 irrigation development might add 6 percent to the productivity capacity of western land. Multiplying a 6 percent increase in land productivity times a 50 percent increase in production per acre would equal a 60 percent increase in total agricultural production. This represents a productive potential, but market considerations will determine whether it is fully utilized. Such an increase in production, though large, is possible in view of past trends and current plans for irrigation development. Assuming past trends will be somewhat modified, I should say that the most probable increase in total agricultural output in the West will be nearer to 30 or 40 percent by 1960, compared with 1940. Let me repeat: a substantial part of this has already occurred, during the war.

Will market prospects justify such a production increase? On the basis of anticipated western population growth, the regional market for agricultural products may expand 33 percent by 1960, compared with 1940. Part of this has also occurred during the war. To this probably can be added some increase due to higher consumption per capita, particularly if employment is high. If the national population increases 15 percent by 1960, the market for western agricultural products, outside of the western region, should increase about proportionately because of that fact. In

addition, per capita consumption, particularly of the fruits, vegetables, and other products that the West ships East, should rise appreciably. Considering these increases in regional and in national market, the total market for western agricultural commodities is likely to rise by perhaps 25 to 30 percent, from 1940 to 1960.

On the face of it, these estimates indicate a somewhat greater increase in output than in markets. A conclusion that surpluses will develop is unwarranted, however, because estimates of this sort can hardly have the precision necessary to detect a surplus of 10 or 15 percent 15 or 20 years into the future. The conclusion can safely be drawn that both agricultural production in the West and agricultural markets for western products will increase materially (one-fourth or more) in the next 15 years.

There is good reason to believe that the West will continue to have an agricultural production greater than its consumption. Indeed, as one looks at the past, it appears that agricultural output has expanded fully as rapidly as population has grown, and that net outshipments have been an approximately constant proportion of total production for the last 30 or 40 years. They may well continue so. The makeup of outshipments and inshipments has varied, and is likely to continue to change, but the relative balance has been nearly the same.

An expanding output, a growing market, and changes in types of production provide an opportunity and constitute a challenge to the agricultural industry of the West.

LABOR AND ITS SHARE OF THE NATIONAL INCOME

S. Eugene Allen, Manager
Oregon Labor Press
Portland, Oregon

As we look about the contemporary American scene, some of us may be appalled at the industrial unrest and disputes that mar our reconversion picture. Actually, it is not nearly as bad as it seems on the surface and such issues as divide us are basic to our future. They deserve a more careful examination and consideration than most of us give them.

It is frequently taken for granted that strikes are due solely to the obstinacy of labor unions. When I hear someone go into the old routine against labor unions for all the ills — real and fancied — he thinks the nation suffers, I think of the old weatherbeaten sailor who wandered into a waterfront mission where a preacher was holding forth in strong language on the Ten Commandments, detailing at great length the many ways in which they could, and were, being broken constantly.

The sailor departed in a subdued mood, but after walking a few blocks, his face brightened and he squared his shoulders. "Anyway," he said happily, "I never made any graven images."

I do not want to come here this evening and indulge in acrimonious discussion about some of our pressing industrial relations problems. It would be out of keeping with the spirit of intellectual integrity and scientific inquiry that I think must characterize our approach to these problems of human relations. Rather I should like to discuss the basic problems of living standards and employment and prosperity and the relation our national labor and wage policy has to their achievement. I assume that you want me to be frank, and I shall be.

One of the encouraging aspects of our American scene is that we are making an effort to discover what the facts about our political and economic institutions are. It is in the tradition of colleges and universities to inquire into the problem of human relations as well as to deal with scientific and abstract pursuits of learning.

This occasion affords me an opportunity to compliment the State College for the splendid contribution it is making in the field of industrial research. The staff of the College has a distinguished record of practical achievement for Oregon's agriculture and industry.

Right now, several noteworthy projects are being carried out by the College that have as their aim increasing the productivity of Oregon industry and the establishment of new enterprise in this state and region. I could not mention them all, but I can suggest two or three examples.

In Southwestern Oregon, there are substantial deposits of a relatively low-grade chrome ore. A research project is now underway to determine economical processes for the development and use of this resource.

Great strides are being made, under the leadership of the State College, in the utilization of wood wastes and the development of new wood projects. As a result of this type of research and study, I have no doubt that substantial new industries will be brought into being and our economic and social progress enriched.

Sources of industrial carbon are being sought out and attention is being given to developing space heating by means of electricity upon a sound basis.

These are only examples of the kind of practical work that is being done on this campus. It is the type of thing that yields great returns to the State and to the entire nation.

One of the nation's great newspapers — the Oregon Journal — has taken a particular interest in this type of activity and has encouraged it in many ways. Sometime ago I was privileged to attend a dinner given by that paper, the purpose of which was to stimulate interest in this work and to foster it through the establishment of research funds and grants of various kinds as well as through more adequate legislative appropriation. This, too, is good; and I compliment Mr. Jackson and his associates on the Oregon Journal for their interest and encouragement in this field.

But it is equally important, as you people here recognize, that we understand the human relationships that are such a tremendously important factor in American industry. The attitudes that employers and employees have toward each other are quite as important as the industrial processes by which physical operations are carried out.

We have not always paid the attention to this problem that it deserves. And frequently much of the attention that has been paid to it has been biased and slanted strongly against the individual workman and his organization and in favor of the industrial corporations.

You know the modern industrial corporation is a very recent development, if we consider it from the historical point of view. Corporations are necessary to a mass-production economy, but we need to remember that they are devices created by men to serve men.

The following quotation will serve to indicate some of the thinking that we have associated with our industrial development.

It is adapted from Morrison and Commager's "The Growth of the American Republic."

"The climate of opinion in which these ideas flourished was hostile to organized labor, but not until comparatively recent years was that climate moderated by new intellectual currents. Meantime there had developed, in effect, a double standard of social morality for labor and capital. Combination of capital was regarded as in accordance with natural laws; combination of labor as a conspiracy. Monopoly was good business, and business men denounced or evaded the Sherman Act, but the closed shop was un-American. It was the duty of government to aid business and to protect business interests, but government aid to labor was socialistic. That business should go into politics was common sense, but that labor should go into politics was contrary to the American tradition. Property had a natural right to a fair return on its value, but the return which labor might enjoy was to be regulated strictly by the law of supply and demand. Appeals to protect or enhance property interests were reasonable, but appeals to protect or enhance labor interests were demagogic. Brokers who organized business combines were respectable public servants, but labor organizers were agitators. The use of Pinkerton detectives to protect business property was preserving law and order, but the use of force to protect the job was violence. To curtail production in the face of an over-supply of consumers' goods was sound business practice, but to strike for shorter hours in the face of an over-supply of labor was unsound. The list might be extended, but the principle is more interesting than the practice. The double standard was illogical, but it was real, and labor had the choice of conforming to it, defying it, or changing it. Conformation was not to be expected, and defiance was generally suicidal, so labor naturally directed its efforts toward changing it. The story of the gradual modification of this double standard can be read in the history of labor organization and in the record of social legislation of state and federal governments over the past fifty years."

Now then, an integral part of free enterprise--and honestly I'm not sure just how devoted even American business men are to that ideal--is

free labor, free unions and collective bargaining.

If our industrial scene seems confused, it is because we are confused. We won a great military victory and we were constantly assured — indeed we assured ourselves just as we whistle when passing a cemetery — that once the military victory was won, we would build a brave new world. We would establish justice. We would have the "four freedoms" established "all over the world." We uttered, or at least our President uttered in our name, great words in the Atlantic Charter. We repeated them so much that some naive souls even began to believe them, but most Americans thought of them as mere slogans.

The truth is that we had no war aims. We didn't know why we were fighting. We exercised a sort of self discipline because a great many of us had an uncomfortable feeling that if we didn't, we would be regarded as of questionable patriotism. But when the war ended, we shuffled off at least some of the hypocrisy and pulled some of the wool off our eyes and we resumed our old ways. And why not? Wasn't that what we were fighting for? Well, I don't know, but at least some folks said it was.

It has been said too often, in fact even to repeat it, that "eternal vigilance is the price of liberty"; and we could honestly add to that that a good deal of public inconvenience is also the price of liberty.

Strikes are an exercise upon the part of workers of that traditional liberty. Lockouts and low wages are also a part of that liberty. And if the public suffers because labor and management cannot dispose of their mutual problems without a public brawl, it is a part of that price we pay for liberty. And, in my view, a mighty cheap price. And when I say this, I am perfectly conscious of the dependence that we all have upon smooth industrial operations.

Strikes are a symptom. They indicate a deep-rooted social disease. That disease is fear, and suspicion and selfishness. Fear of unemployment, fear of low wages, fear of business failure, fear of tax foreclosures, fear of low prices for farm products; these are only a few of the fears. Some of them are encouraged by government. Some of them are the obvious manifestations of human cussedness.

Of course, industrial profits are high. I am sure that a good case can be made for a redistribution of our national income, but as a practical matter if all industrial profits were devoted to payment of higher wages, it would not raise the general level of wages very substantially. Without meaning to discount the importance of profits in the industrial picture, nevertheless, I am constrained to suggest that if — in the long run — more wages are to be paid workers, they must come primarily and almost entirely out of increased productivity.

I take it for granted that in America we are committed as a social policy to rising living standards for our citizens.

Therefore, with this basic assumption running through my thinking, I suggest it is more profitable to consider the means by which we shall

achieve a rising living standard rather than to undertake to justify a particular demand or defend a particular strike in industry.

It is simply elementary economics to state that standards of living depend upon the production of goods and services. Nevertheless, it is worthwhile to repeat the proposition because, as a nation, we have behaved in precisely the opposite manner. Industrial combinations have sought by monopoly to artificially maintain high prices by restricting the output of their factories and plants. Farmers have sought, through legislation, to maintain parity prices by restricting farm production. Labor has sought, through featherbedding and restrictive union rules to maintain wages by restricting production.

Of course, it is easy to understand why each group in our society has pursued these policies, but the net result on the national economy has been that we have produced less when we were ostensibly trying to improve our standards. It hasn't worked! Nor will it work any better in the future, and we will indeed be a foolish people to again undertake such a scheme.

Economists are in substantial agreement that our productivity per hour of labor has increased. They are not in agreement as to the precise amount of this increase. Perhaps as good a general statement as can be found is that by Dr. Julius Hirsch which was printed in the November 19th issue of "Barron's" — a conservative financial journal. Dr. Hirsch has made a very careful and exhaustive study of the available data on the rate of increased productivity in our industrial plant. In this well-documented statement, he expresses the opinion that our productivity has increased by at least three per cent annually since 1940. He shows that it has increased by substantial amounts prior to that time.

He concludes his article with this very significant statement;

"If we ignore, as we should, the present situation, a lasting gain in efficiency between 1940 and 1947 of 3.5% or 4% per year will mean that for the volume of production for which 100 workers were needed in 1939, perhaps 76 or even only 72 may suffice in 1947. Or, in other words, the labor force necessary to produce the same output would not be 45 to 46 millions as in 1939, but rather 36 millions or less.

"To employ the same number of people as in 1939, our total effective purchasing power will thus have to be 20% to 25% higher. If we cannot do this, we will not employ as many people as in 1939. Yet we actually hope to increase our prewar labor force by 12 to 15 million.

"Therefore, let us not overlook the great danger of what appears to me to be an obvious trend toward technological unemployment on a larger scale than ever experienced before. From 1939 to 1945 we have gone through greatest mass production period in our history; we should remember that efficiency gains are never limited to those industries in which they were originally obtained. By the availability of new commodities and of old ones at lowered prices, these gains spread throughout the national economy.

"Production power has again progressed much more rapidly than consumption power. In 1933 we had 24.7% less production than in 1929 and 12 to 13 million unemployed. In 1939 we had 4% more production volume than in 1929, but we still had eight to ten million unemployed. Increased mass production provided us with a 4% higher volume of output with about three to four million less employed.

"We may have to be prepared for much more additional technological unemployment than is forecast in most of the studies published by the administration, Congress, and almost all of our economists."

Now then, I ask you to ponder this statement of Dr. Hirsch for a moment. What he is saying in simple terms is that our increased productivity per worker is so great that we can produce as much as we did in 1940 with several million less workers. Surely, the significance of that situation cannot escape even the dullest among us.

I should like, also, in this connection to refer you to an article in the current issue of Fortune magazine under the title of "American Productivity" and written by Charles R. Walker of Yale University. He concludes, as did Dr. Hirsch, that American productivity has risen by more than three percent annually. He, too, concludes that we can produce our 1940 level of goods and services with several millions less workers than we had in that year employed. And even then we had millions of unemployed.

Well, of course, we are not going to be satisfied with a 1940 variety of economic existence in this nation. We must produce more and more goods for the raising of living standards. Let me repeat what I have already said: Living standards depend upon the production of goods and services!

Unfortunately, a great many businessmen recognize only this much truth, but that is only half the story. An essential half, yes, but still only a half. The other — and equally essential — half of the story is that this increased production must be distributed among the citizens of the nation. Otherwise it soon begins to pile up and the very next thing that happens is industrial stagnation sets in, unemployment commences, business falls off, the old weary circle commences once more.

How to distribute these goods and services among us is not easy to answer, but a rather simple general statement will provide at least the direction for us to start travelling. There are only two ways in which this can be accomplished. We may increase wages and lower unit costs. As a matter of fact, our whole economic history gives abundant proof that this process is precisely what does take place. Without one single exception every one of our mass produced consumers' goods is being sold for very much less money today than it was many years ago and without one single exception the wages paid American workmen in these industries have been substantially increased, but the general trend toward lower unit costs and higher wages has simply not been accelerated enough. It has been forced on industry by the organization of workers into effective labor unions. Our problem is to see that these two things happen simultaneously and more rapidly.

You will notice that I have said they must happen simultaneously and this simultaneous occurrence is very important for if one happens without the other, it gives an imbalance to our economy which sets in motion the forces of business depression and these forces rapidly gain momentum and are out of control before we can effectively act upon them.

Now then, of course, when I say a simultaneous reaction must take place in our industrial life, I don't mean that everything has to happen next Tuesday, but I do mean that within a comparatively short time our economy must make these adjustments or we are lost.

As further evidence of the two-fold nature of our problem, I quote from Dr. Walker's "Fortune" article:

"In looking at the past or projecting the future of American industrial efficiency, it is important to emphasize that high productivity does not necessarily mean a healthy economy. No one should confuse what might be called the promissory note of productivity with payment of prosperity to all. Productivity doesn't mean that. But if solutions are found for certain other problems, organizational, political, and psychological, it will mean just that. To make clear this all-important reservation, examine for a moment the relation between productivity and other important elements in a healthy economy; employment, output and wages.

"If you take four major groups of industries that comprise 75 percent of industrial income and employment in the U.S. — manufacturing, mining, railroads, electric light and power — the following illuminating comparisons between the years 1923-24 and 1936-37 can be made. Productivity in manufacturing went up 50 percent in these years, mining 89, railroads 43 (measured by traffic miles), and electric light and power 111. But with the exception of the last, volume of output didn't keep pace with productivity. Manufacturing output went up 25 percent and mining 12. Railroads declined in output 17 percent. Electric light and power mounted 141 percent. This spread between productive efficiency and output was vividly reflected in declining man-hours of employment. Manufacturing declined in man-hours 16 percent (remember productivity went up 50), man-hours in mining declined 41 percent (remember productivity went up 89). In railroads man-hours dropped 42 (productivity has risen 43). Only in electric light and power where both output and productivity had increased tremendously did man-hours of employment go up — by 14 percent.

"What a decline in man-hours of employment means for the individual worker is obvious. It means that he gets the benefit of increased productivity in more leisure, by working fewer hours each week. And it means that as a consumer he can get more for his money. But it also resulted for the period in question in 'involuntary leisure' or fewer hours a week than he would have liked to work. These sharp declines in man-hours also reflect the trough of unemployment in the thirties. In other words, a high level of productivity may coexist with only partial employment, as the depression years tragically illustrated. To realize the advantages of high productivity for everyone, full employment and a large volume of output are necessary.

"The spread between man-hours of employment and increased productivity also shows up in declines in earnings. If you look at the whole span between 1919 and 1939 for manufacturing, say, you will find that labor gained a lot from the rise in productivity in hourly wages. Hourly wages, in terms of real purchasing power, were up 45 per cent. But annual earnings, in these same terms, were down 20 per cent.

"As to capital -- for manufacturing from 1919 to 1939 the total capital investment decreased by 4 percent (it had gone up in the first decade) and aggregate earnings declined 11.8.

"Over the two decades everyone -- as consumers -- gained prodigiously from increased productivity. The American citizen in 1939 was able to buy a third more product for every dollar spent -- not to mention that he was offered a greater variety and for the most part a higher quality of product for his money.

"Productivity, then, is potential prosperity, promise, but not always performance. The other elements in the economy must be in proper relationship if investor, worker, consumer are all to gain from industry's ability to turn out better and cheaper products, with less labor power. Above all, output and employment must keep pace with the upward bounds of productivity."

The great corporations of America performed a signal service for our nation and our economy when they developed the large scale enterprise to make mass production possible and when they discovered the managerial genius to turn raw materials into goods for human consumption at low costs.

But American labor unions have played no less an important part in leading the way toward expanded standards of living for the average American citizen. Labor unions stand today as the one great body of opinion and thought seeking to translate our efficient productivity into living standards of real proportions for all of us.

They may falter at times. Sometimes they suffer from ignorant or demagogic leadership -- what organization doesn't? But the native good sense of the American worker, as expressed through his organization, is the one thing that, coupled with the good sense of other Americans, will pull us through the crisis if we can be pulled through. And I am ready to say here and now that I am not any Pollyanna about this business. We could fail, but we don't have to, and we won't if we are the least bit wise.

The share of the national income that labor claims is not an amount that can be stated in terms of dollars, nor even in percentages. Labor's share of the national income is that amount of our total product which we as laborers earn and which we must consume in order to maintain a healthy economy, and it will be changed and revised from time to time. Revised upward I may say. Unless, of course, we reject the theory of an expanding economy, for an expanding economy means simply one thing: more and more people will be able to enjoy more and more of the good things of life.

Labor doesn't want to achieve this at the expense of anyone else. We don't want to take it away from anyone. We want it to come out of the

only place it can come from: Increased productive capacity.

And don't forget when you are talking about "Labor," you're talking about fellow American citizens with the same ideals and the same aspirations as other citizens. You are talking about people who are essentially fair, who know America and love it, and who know how to make effective use of the typical American technics of getting things done.

I am assuming that we intend to maintain our democratic capitalism. Of course, if we are ready to abandon this essential American institution and adopt the dictatorship technic, as for example the Russians have, or the Germans, or the Italians, or the Japanese, we can indulge in the topdown planning of our economy.

But I state flatly that the American Federation of Labor wants none of that. Even though our policies may seem to be headed that direction, sometimes, we want none of it. We believe in capitalism. We are committed to the democratic process. We are not afraid of words, nor are we lacking in self reliance.

I have read Henry Wallace's book "Sixty Million Jobs." It was interesting to observe that poor old Henry had to go back and rely on the economic theories of Alexander Hamilton to justify his viewpoint. If that kind of fuzzy thinking is to characterize our economic and industrial life, we are indeed paupers for ideas.

There is no easy way to solve our problems, nor is there any magic, nor any ledgerdemon by which we can make ourselves a prosperous people.

We will have to work. We will have to observe the simple rules of democratic capitalism. We will have to dedicate ourselves to the fundamental principles of justice and equality of all men before the law.

If I may indulge in a bit of self criticism, I should like to suggest that if American labor seeks special treatment at the hands of our government, we must also be prepared to accept the restrictive legislation along with the special interest legislation. Of course, I am mortally frightened at the spectacle of every last group interest in America descending on the Congress and demanding of the poor befuddled law makers an answer to their every problem. It is a national psychoneurosis that we must overcome. If we don't — well, what happens to incurable neurotics is well known.

Stripped down to its barest essentials, labor's case for higher wages, and for shorter hours is based on the plain economic fact of increased productivity. Labor unionists see that our productive plant has ample capacity to supply all of our needs. Labor unionists see that we have the managerial genius — or to use a currently fashionable phrase — the "know how" to produce an abundance for all of us. Labor unionists, as simple but practical people, see no point in enduring the misery and heartbreak of unemployment or low wages or poverty. And we start with the assumption that if we have the resources, the plant, the managerial genius, the labor force, we surely must have among us the good sense, to apply these ingredients in the correct proportions to produce a high living standard for our nation.

We have no idea of tolerating any further mass unemployment nor poverty stricken American citizens. We demand, and we will fight for with all of our economic and all of our political and all of our moral strength, the living standard to which American citizens are entitled.

Specifically, I mean a good home, security against unemployment and old age, and sickness and accident. I mean an opportunity for a good education and for cultural and recreational pursuits. I mean the same kind of a living standard that each of you looks forward to. That is not expecting much of a great productive nation such as America. That is not expecting much of our economy.

The secretary of the Treasury, Fred Vinson, put it another way recently when he said that the American people are facing the pleasant prospect of learning how to live with their standards increased at least 50 percent.

That, my friends, is not Utopia. That is the minimum that we can afford in this nation. To tolerate less is to court disaster and to reckon with the four horsemen.

But our claim to these things is based upon the productivity of our American industrial plant and machinery and management and labor. We don't expect government to produce any miracles. We agree with Herbert Hoover that "there are a great many things going around in the dark besides Santa Claus."

OUTLOOK FOR OUR FARM EXPORTS

A. Rex Johnson, Assistant Director
Office of Foreign Agricultural Relations
United States Department of Agriculture
Washington, D. C.

I'm glad to be speaking today to an audience that needs no introduction to the subject of my speech, the outlook for our farm exports.

You have long been closely associated with foreign trade so already are aware of the importance of foreign markets for a prosperous American farm life. Export markets are much more than a safety valve of our agriculture, they must be planned for. We cannot count on a reasonably full use of our developed agricultural resources without them. Nor, under relatively free market conditions, can we count on good farm prices without them, as the amount of a crop that is exported greatly influences the price for the part that is sold domestically. Even under the restrictions prevailing before the war we exported about 40 percent of our cotton, one-third of our tobacco, nearly one-tenth of our wheat, and substantial portions of our lard, prunes, raisins, apples, pears, oranges, and rice.

It is desirable, therefore, that we attempt to size up the foreign market at this time - just as we are entering the postwar period. What prospects do we face in the months and years just ahead for a fairly good level of exports?

For any adequate appraisal of the situation, we must divide the postwar period into two parts - a short-term period that may last for perhaps 2 or 3 years after the end of fighting, and a long-term period which will follow after that.

During the short-term period, which we are now in, farmers may expect to benefit from the heavy demand for their products from Europe and the Far East. Prewar problems of over-production in relation to demands are not likely to reoccur except in the case of a few items.

Per capita world food output in 1945-46, for instance, is estimated to be about 10 percent less than during the immediate prewar period. Reduced carry-over supplies of nearly all major food products, together with disorganized distribution systems, mean that the supply at present is even further below normal than the drop in 1945 output would indicate. Drought followed battle in Europe. For the entire Continent (exclusive of Russia), even allowing for wartime processing economies, the present year's food supply is estimated at 20 percent below the prewar level. The food output in France is at a 5-year low. Belgium cannot approach the 50 percent of its own food which it produced before the war. From Italy, from Austria, from the Netherlands, from even the fertile Danube Basin come somewhat similar reports. Russia's food situation will be somewhat improved, and the middle and Far East are in moderately sound position, with the exception of a sharp deficit in Japan. Even the temperate countries of South America, normally exporters of food and other farm products, have suffered severely from drought and can contribute less than average amounts to the world food supply.

Thus for the current year and perhaps for the next year or two foreign demand will be heavy for the farm products of the United States and of several other surplus food producing countries, notably Canada, Argentina, Australia, and New Zealand. So much for the immediate postwar period. It will be a time, largely, of tapering-off, marked by farm production and marketing conditions not greatly different from those of the actual war period - at least for most products.

For the long-term period, however, export prospects will be less certain. This is the period that is of primary concern to us here. And in attempting an appraisal of prospects in this period, I'd be less than frank if I failed to say that they are such as to give us cause for serious study and concern.

Between the two world wars, the total volume of this country's foreign trade began going down-hill. Exports represented a smaller and smaller portion of the national income - which reflects our capacity to trade.

Of more immediate concern to us here is the fact that our foreign trade in farm products fell off even more sharply than did foreign trade as a whole. As exports of raw materials, which include farm exports, became a smaller and smaller share of our total exports, exports of finished and semi-finished manufactured goods during the same period naturally grew to be a larger and larger share.

Let's be a little more specific at this point. In the first five years after the Civil War (1866-70), raw materials accounted for two-thirds of all our exports. Those were the days when cotton was king and was "riding high." During the 5-year period, 1936-40, however, they made up only a little more than a fifth of the total. By this latter period, exports of finished manufactured products accounted for half of the total. In the decade prior to the Civil War they made up only about 15 percent of the total.

This leads us to the \$64 question: What, basically, causes these trends in our foreign trade? If we can find the answer to that one, maybe we can control and direct them to our advantage.

Luckily enough, the answer is not hard to find. These trends go back in a considerable degree to an unsimple fact that can be simply stated. Many nations of the world have for many years past been following so-called self-sufficiency trade and production policies. And I want to stop here just long enough to underscore that word so-called. These policies were aimed at making each of the countries concerned as nearly as possible economically free and independent of the rest of the world. Each country sought, separately and independently of the others, to keep depression from its doors and/or to assure itself of adequate supplies of essential goods and materials in case it got into a fight.

In point of time the United States was among the first nations of the world, following the first World War, to set up a high trade barrier policy. Many nations soon followed suit in the interest of that so-called self-sufficiency. In the period between the two world-shattering conflicts, during which time two depressions hit the world economically, the flow of commerce across national boundaries has been increasingly obstructed by government action. Imports have been controlled, not alone by increased tariffs, but by quotas, embargoes, more stringent custom formalities and exchange control as well. Exports have been forced through barter, currency depreciation, and subsidies. Preferential systems between countries, permitting discrimination as between suppliers and customers, also waxed in favor. Bilateral deals between countries, which rule out outsiders, became the order of the day.

So far as the United States and its farmers are concerned, then, the total volume of this country's foreign trade between the two world wars fell off, and raw material exports grew to be a smaller and smaller portion of the smaller whole. But there were greater and more far-reaching results for the world as a whole.

As long as these devices were used by only a few nations, they may have led to some temporary, short-time advantages for those nations. But when they became the common property of many or all nations, they tended to cancel each other as far as any advantages were concerned.

This was not the case, however, as to the disadvantages. For, taken as a whole, these self-seeking devices restricted the buying power of the countries against which they were directed. They made it difficult, or

impossible, for the target nations to expand their industry, have full employment, and satisfy the wants and needs of their peoples through a higher standard of living. They throttled world trade, led to international frictions, and helped plant the seed for a new and bumper crop of death on the battle fields of the world.

One might have thought - and hoped - that the war would have eliminated these economic weapons from among the peace-time instrumentalities of governments. The fact is, however, that it served only to increase government intervention in world trade. Where trade channels were not actually broken by war they were changed to meet its demanding voice. As a result, governments today have more of a strangle-hold on the world's trade than in 1939, and the regimentation of trade is all but complete.

I wish that in this appraisal I could stop painting a dark picture at this point. Unfortunately, I cannot, for just as the above-mentioned considerations suggest the possibility of a badly shrunken foreign demand, a number of other factors indicate strongly that world supply of a number of international commodities in the long-time period ahead may be substantially larger than before the war.

We will not be greatly surprised, of course, to see a world surplus output of wheat, cotton, tobacco, wool and some fruits, in relation to effective demand. Or of sugar, if the Far Eastern producers return to their prewar production levels. For the most part these are familiar international agricultural "surpluses" that have plagued the world's farm producers at various times since the first World War.

We may not be as well prepared to accept some other production problems that have grown directly out of the war. Two notable changes appeared in the production picture in the Western Hemisphere - sharp increases in the output of fats and oils and of rice. This was in an attempt to replace the supplies of these products that came from the Far East before the war. Our own farmers, as you well know, made great increases in their output of peanuts, soybeans, and flaxseed during the war. Argentine output of sunflower seed quadrupled. Rice production in this hemisphere increased by nearly half. In time there will probably be available on world markets supplies of Far Eastern rice and vegetable oils. When that time comes, the world supply is likely to be excessive in relation to effective demand. Our producers probably will be faced with the choice of cutting back their output or of competing in world markets with the low-cost Asiatic producing areas.

All in all, the picture does not add up to a pretty one for our farmers. On the demand side, as we have seen, there is the badly shrunken foreign market that goes back to the limited supply of dollars held by foreigners who need our farm products; there is the fact that, having only this limited number of dollars, foreigners are more likely to spend them primarily for our manufactured goods than for our raw materials; and finally there is the fact that, government restrictions and trade controls being as they are, citizens in foreign countries are not entirely free to spend what money they do have for our products, even if they chose to do so.

Then, on the supply side, there is the increased world production in the case of a number of international commodities - all to be sold in a world market that is potentially smaller than in prewar days.

We've talked about the outlook thus far in rather general terms. Now, let's get down to cases for a moment and see what all this means in terms of farm products in which you, as Oregonians, are interested personally. A substantial part of your farm income comes from wheat, fruit and nuts. What is the outlook for these crops?

Right now, there is a strong demand for every bushel of United States wheat that can be put in export position. Only because of this year's record crop of 1,123,000,000 bushels can we come close to meeting the demand. During the first six months of the current wheat marketing year, an estimated 175 million bushels of wheat and flour equivalent will be exported. Nothing like this has existed since right after the last war, when our net exports averaged (1918-21) close to 270 million bushels yearly.

The bulk of this wheat has been going to Europe, the flour to Europe and Latin America. While exports to the Pacific have been relatively small thus far, they are now picking up, notably to China. This season's large European demand is due largely to this year's smaller European crop, which was almost 400 million bushels smaller than last year and fully 500 million bushels less than the prewar (1935-39) average. The cumulative effects of fertilizer shortages and last summer's widespread drought are mainly responsible for the short crop, although losses from military operations, labor shortages, land reforms, and other factors played their part.

The heavy export demand for our wheat is also due in part to the fact that output in Argentina and Australia this year, while larger than in 1944, is somewhat smaller than the prewar average. The Canadian crop was 100 million bushels smaller than in 1944 and only slightly larger than the prewar average. The world wheat carryover on July 1, 1946, promises to be reduced to the lowest level in many years. It may be expected to begin to increase by July of next year, however, if good harvests are obtained in the exporting countries and some recovery occurs in Europe from this season's very low level of output. A substantial increase in carryover in surplus-producing countries, with the problem of surpluses again being talked about, might be expected by 1948. This, roughly, is about when we begin to get into the long-term picture.

In this long-term period we can count on the United States having a production machine - land, machinery, fertilizer, manpower, etc. - that year after year will turn out substantially more wheat than we need domestically for food. In fact, we could without too much effort turn out a billion bushels yearly. We should not count on consuming more than 500 or 550 million bushels as food. In addition to food we use annually about 80 million bushels of wheat for seed and 75 to 125 million bushels of wheat for feed - making a total normal domestic demand for 700 to 750 million bushels. Such a quantity of wheat could probably be marketed year after year at nearly parity prices.

The question is, then, can the remainder be exported year after year at a satisfactory price? We all believe that we can export some wheat in competition with other exporting nations, but even the experts would not want to hazard a guess as to just how much. That there will be keen competition abroad from Canada, Australia and Argentina there can be no doubt. This is evidenced by the fact that Canada has set an export ceiling price which is about 40 cents a bushel less than our domestic and export ceiling price determined on the basis of parity. Argentina and Australia have also fixed export ceiling prices more-or-less comparable with the Canadian price.

That, in short, is the picture that our wheat exporters are facing.

But what about fruit and nuts? The end of the war left many European countries virtually bankrupt, with destruction and hunger staring them in the face at every turn. The elimination of hunger and the making of essential repairs to war-damaged properties, consequently, are receiving first attention. This means that the limited supply of foreign exchange available in these countries will be expanded for essential building materials, machinery, and for the basic foods, such as wheat, meat and fats. Dollar exchange for the purchase of fruits and nuts will be at a minimum. This situation is expected to continue for at least five years.

Even after reconstruction is well under way or completed, and the short-term postwar period is past, the outlook for fresh fruit exports will continue discouraging. Sweden and Switzerland are perhaps the only countries that may regain prewar importance for U. S. fruit in a relatively short time. The political and economic situation in Central Europe is expected to make exports to that area limited and difficult for several years. France and the Low Countries will not take their prewar quantities of our fresh fruits for some years to come. Certain of the countries will consider it expedient to buy from Canada, New Zealand, Australia, Argentina and Chile. Unless the British Empire's preference scheme is abandoned, fruits from the first three of the countries will enjoy a preferred position in the British market.

The outlook for dried-prune exports in the next 2 or 3 years is much brighter than for the period from 5 to 10 years away. Output in the Balkans this year is substantially less than the prewar average and is expected to continue at this lower level for a few years more. As farming conditions gradually return to normal, however, output is expected to increase. Production in the southern hemisphere, Argentina, Australia, Chile, and South Africa has mounted steadily since the war, and competition with these countries for available Latin American and European markets is expected to increase.

Our filbert and walnut exporters are going to face keen competition from producers in other exporting countries. France, one of the world's largest walnut producers, is expected to make every effort to dominate the British market and that of the neighboring European countries. Her lower production costs and nearness to these countries, which means substantially smaller freight charges, give her a strong advantage over our own exporters. Walnut output in the Balkans is well beneath prewar levels,

but it still will suffice to cover the demand for walnuts from that area and Eastern Europe.

As for filberts, Canada and Mexico may offer us limited outlets in the years ahead. But a much more important thing for domestic growers to watch is this. The next few years may see a marked decline of prices abroad and a big effort on the part of foreign growers to export to the United States. Filbert acreage in Italy, Spain and Turkey suffered relatively little war damage, and output will continue at prewar levels at least. Our own output, while steadily increasing, will not be in a position to export to Europe in the face of the strong competition both from the price and supply standpoint.

Let me at this point underline the fact that in this long-term agricultural export outlook, we face a new problem in a new world. It is not a problem of reconversion. It is not even a problem associated with the return of peace, as we used to know it. It's not a re anything.

To solve it, we must give up the idea that it is merely a problem of going back to the old and familiar. For the old and familiar, no matter how unpleasant it was at the time, always breeds inertia - ease - contentment. In addition, we must accept the idea that things don't - and can't - even stand still. They've got to move on to the new and the different, and we with them. And if we are to solve each new day's problems as they arise, we will do it only by facing them realistically. By that I mean with as few preconceived notions as possible and with a completely open-mind - the scientific attitude of mind.

When the physicist or chemist goes to his laboratory and closes the door, to the extent that he succeeds in his objectives he leaves all his preconceived notions and prejudices behind him. As nearly as possible he becomes a disembodied mind. The nationality, race, creed, ideology, or party of the molecules or atoms with which he is working make no difference to him - none! He concerns himself only with the end result. It was this attitude of mind which on August 6, 1945 gave birth to Atomic Age, with all man's mastery over the physical world that it implies.

What I'm coming to, in conclusion, is this. Only through a complete open-mindedness, a feelingless objectivity, and a boldness born of imperious necessity, can we hope to solve the problems with which we are confronted today.

It was in this spirit that Secretary of State Byrnes announced, on November 16, a series of proposals for the revival of world trade which he intended shortly to submit to the peoples of the world for consideration and adoption. Because I regard them - and their adoption - as the only way out for peaceful trade in a peaceful world, I want to repeat them at this time:

"We intend to propose that commercial quotas and embargoes be restricted to a few really necessary cases, and that discrimination in their application be avoided.

"We intend to propose that tariffs be reduced and tariff preferences be eliminated. The Trade Agreements Act is our standing offer to negotiate to that end.

"We intend to propose that subsidies, in general, should be the subject of international discussion, and that subsidies on exports should be confined to exceptional cases, under general rules, as soon as the period of emergency adjustment is over.

"We intend to propose that governments conducting public enterprises in foreign trade should agree to give fair treatment to the commerce of all friendly states, that they should make their purchases and sales on purely economic grounds, and that they should avoid using a monopoly of imports to give excessive protection to their own producers.

"We intend to propose that international cartels and monopolies should be prevented by international action from restricting the commerce of the world.

"We intend to propose that the special problems of the great primary commodities should be studied internationally, and that consuming countries should have an equal voice with producing countries in whatever decisions may be made.

"We intend to propose that the efforts of all countries to maintain full and regular employment should be guided by the rule that no country should solve its domestic problems by measures that would prevent the expansion of world trade, and no country is at liberty to export its unemployment to its neighbors.

"We intend to propose that an International Trade Organization be created, under the Economic and Social Council, as an integral part of the structure of the United Nations.

"We intend to propose that the United Nations call an International Conference on Trade and Employment to deal with all these problems.

"In preparation for that Conference we intend to go forward with actual negotiations with several countries for the reduction of trade barriers, under the Reciprocal Trade Agreements Act.

"Success in those negotiations will be the soundest preparation for the general Conference we hope will be called by the United Nations Organization."

Let us hope - and work - for their adoption universally, for they constitute a cooperative world approach to the problem. If we've learned anything in the last quarter of a century - and learned it the hard way - it is simply that there is no such thing in this world as self-sufficiency. Man cannot live unto himself alone. Neither can nations. So-called self-sufficiency, whether of man or of nations, is but the prelude to ultimate self-destruction. The cooperative world approach is the way to peace, prosperity and plenty.

GOVERNMENTAL POLICIES AS THEY AFFECT INTERNATIONAL TRADE

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Despite the fact that the world situation today is such as to obviate any necessity for the United States to compete for foreign trade, the fact remains that the orientation of the thinking of most of our citizens is in terms of competing for world markets. Obviously such competition will, on the whole, be hardly existent for some time to come, for the majority of the nations of the world have been stricken and shattered and are in no position to compete for much, other than the opportunity to buy our goods and that at a rate as consistently rapid as we find it possible to turn them out. Though this circumstance will not obtain beyond a certain period, it would be a mistake to align our governmental policy in international trade in the direction of restriction long before it becomes necessary. Rather should we take the initiative now while it is still possible to remove restrictions and hindrances to trade and to build up a psychology of relative freedom.

Never before in modern history has a nation been in so strategic a position to introduce its goods into the markets of practically every country of the world, as it is now possible for the United States to do. Quite probably the very introduction and use of those peacetime goods by all nations will afford us the finest opportunity, not only to win markets but to retain them as well, for many of the nations will, of necessity, be oriented to the use of American machinery and supplies, from which escape, if it may be called such, would be difficult. Indeed it would be well, I believe, if the American people would make it their government's policy to allocate a portion of our total productive effort for some time to come for sale to the many nations now so desperately in need of materials and machines. From a purely business standpoint, not to mention the humanitarian, this would be well, for in a world as closely integrated and interdependent as ours is, the prosperity and wellbeing of all nations, including our own, will depend largely on the speed and thoroughness with which the rest of the world regains its productive capacity.

The eventual success of our willingness to export will depend largely, of course, (and I say "of course" quite knowingly!) on our willingness to receive imports in payment. If we and the rest of the world were to successfully reach at least an approximation of the "full employment" policy, our capacity to accept imports would be established. With employment maintained, it should also be possible to keep trade barriers down. Our real limit to export trade, assuming that eventually we will want to be paid for our exports, will be determined by the ability of potential buyers to earn dollars through their exports to us.

Not long ago the Reciprocal Trade Agreements Act was extended for another three years and it now behooves us to realize the utmost advantage from that extension, both for other nations as well as for ourselves. To the extent that we can foster imports without disturbing our own internal

economy, it becomes not only our sensible right but our duty to do so. The well-known economists, Eugene Staley and Winfield Riefler have made two proposals which I should like to bring to your attention. Proposal number one is that our government couple economic adaptation with reduction of protective tariffs. Doubtlessly such an action will meet with determined, organized resistance on the part of those who will be concerned. Understandably, they will fight for preservation of the status-quo, - unfortunately, despite the long term gain which may accrue to this and other nations as a whole. Unless those who are engaged in producing uneconomically under the protection of heavy restrictive import duties are willing to shift into other lines of production in which our nation has a true comparative advantage, little of real significance will be accomplished in the tariff field. Such shifts will have to be encouraged and helped in every way possible if they are to be made, and it is quite certain that if we are to deal with the situation realistically the industries concerned, which grew up with the acquiescent sufferance of the community, will have to have the costs of the shifts assumed by a broad-spreading of those costs over the same community. There is a case for such compensation I believe in terms of the benefits that the community will reap from the shift.

Such economic adaptation to items of production in which an area has a comparative advantage might well become the subject for action, not only in our and other domestic programs but in an international program under the Economic and Social Council of the United Nations Organization as well. In our own domestic instance the United States Tariff Commission could be directed to prepare and publish an annual survey of all industries which are currently receiving substantial tariff protection, where, for example, the rate of duty is 25% ad valorem or where tariff protection enables the producer to charge 25% or more above the landed cost of similar products from abroad. This survey might, in addition, show the percent of domestic consumption furnished by the industry, how long it has enjoyed the tariff assistance; how its wages and dividends compare with other industries in the same region, what measures were taken by the industry to improve its competitive productive position during the past year, how much was spent on research for the possibility of turning to new areas of production, with what effectiveness the research was carried on, and, lastly, if the prospects for an improvement are not good, to what other areas of production the industry might with fair certainty of success transfer. The government should probably further carry on, or help private agencies to carry on, exhaustive regional resource surveys of the character suggested by Dr. Raver in his talk of yesterday afternoon, so that possible areas of expansion or transfer may be uncovered and encouraged. Lastly, it is suggested that when the case has been thoroughly studied and the possibilities adequately appraised that the article being protected be removed from the free list, provided that the number of persons affected does not exceed 500 and that the move will not impair the military defense possibilities of the nation.

Signatory powers to the United Nations Organization should also obligate themselves to cooperate, with the help of the Economic and Social Council, to carry on similar programs in their own domestic areas and could be given to understand that such help as might be forthcoming from the Bank for Reconstruction and Development, for example, would be partly dependent

on their willingness to cooperate. The realization has not escaped me that many will deem these proposals to be unrealistic. My reply is that the alternative is harder and more costly. At some point we will have to come to the realization that momentary sacrifice of personal or national self-interest, in the narrow sense, is impossible to escape if we, as economic entities, would remain alive in a prosperous and non-warring world.

There is one other attack that might be made on the tariff which could be made in a rather more easy fashion. It is concerned with the removal of barriers which inadvertently reduce or prevent the import into this country of commodities which are not produced in this country. Such are the duties set up to protect a particular classification which, in itself, may now either have gone out of existence or not need protection anymore, and which now prohibits the importation of a product which by legal definition happens to fall into the classification. To avoid this it is proposed that the Tariff Commission be given the right to create a free customs classification for the specific commodity.

The question of tariffs in international trade and our government's policy concerning them is huge and I am rather ashamed of the too rapid treatment which I have accorded the subject in this paper. However, there are other areas of discussion which I feel deserve to be touched upon and, since my time is limited, I shall pass on to them. My belief is, furthermore, that perhaps they merit as much attention, since in most cases they have not been accorded their just amount of attention and, in some instances, are so non-recurrent as to have escaped any continuous discussion over the past twenty years.

Government Policy on Shipping and International Trade

Transportation plays a very vital role in the field of marketing and is indubitably tied up with any attempt to understand, forecast, and influence governmental policy in that area. In international trade it is probably quite fair to state that the term "transportation" is almost synonymous with the term "shipping". It is for that reason that I have felt it necessary to spend a part of the time which has been allotted to me to briefly discuss some of the effects of our present position in shipping on international trade in the era just beginning and what the policy of our government might well be in that connection. Though this paper is limited in its scope to a discussion of government policy as it affects only international trade, it had best be pointed out that no statement concerning shipping could possibly be approached completely validly, if it restricted itself to just that aspect of the importance of shipping. Intimately tied to the problem are its further effects on the shape of world politics, international cooperation, strategy and security, reconstruction and relief in devastated areas, and, last but not least, domestic politics.

Until now and for the past five years, the only considerations which were needed concerning shipping were those which pertained to the war effort. With the war now past, however, the American people and their government will have to realize the position in which they now stand in shipping with respect to the rest of the world and come to a decision as to the policy

which they are going to pursue concerning it. With approximately three-quarters of the world's shipping tonnage at our disposal, any and every action which we may take will have vital consequences for many, if not all, of the countries of the rest of the world. At the end of the war the nation also commanded a large proportion of the world's shipbuilding capacity and, though we would probably not be in a position to compete as favorably on economic competitive terms with other traditional shipbuilding nations, the fact remains that public opinion will be strong to retain as great a part of our dominant position as possible. We have witnessed the necessity and value of shipping for war protective purposes and, undoubtedly, we shall be more wary now than previously lest we find ourselves caught as short as in 1941. However, other considerations will have to be taken into account as well, and realism will demand that they be fairly weighed in their import for international trade, world prosperity and peace, as compared with, though not opposed to, our considerations of security and political strength.

In this period of transportation shortage it becomes difficult to conceive of an oversupply of ships. I would that it were unnecessary to take it into consideration and that we might believe that the international trade of the years to come would consume continuously all of the tonnage now available. For a time that will be the case, what with the transportation of troops, supplies and materials for reconstruction, rehabilitation, and the feeding of the destitute peoples. Then will come a time, however, for other nations, much of whose economy was more or less dependent on shipping, shipbuilding, and the sea, when possibly their entire economy may have to be reshaped in terms of the policy which we pursue concerning the disposal of our shipping and shipbuilding facilities. True, many of our present ships are overaged, ill designed for peace purposes, and have been in many cases of necessity poorly maintained. On the other hand, our advantage is now so great as to overshadow any such slight circumstances.

Among the questions which come to mind almost immediately concerning our policy on shipping, is one which will greatly influence international trade; namely, will the proportions of world shipping distribution after the war resume their prewar status, or, will they be determined more closely along the lines of the present position of world shipping tonnage? It is on this question that most of the discussion and practically all of the feeling about merchant marine policy has concentrated, and it is here that American policy will be most decisive. The greatest sufferers in shipping tonnage decline, as a result of the war, are those on the continent of Europe and among them are such important prewar shipping nations as Norway, the Netherlands, France, and Greece, together with Yugoslavia, Belgium, and Poland. For the first four, shipping played a vital role in their international trading capacity. Part of their fundamental ability to compete and to render payment was through the cheaper use of their own ships and the earnings which were theirs as the result of their shipping services to others. Undoubtedly the trading capacity of the rest of the nations will be considerably enhanced, if they are permitted to regain an approximate amount of shipping tonnage somewhat comparable to their prewar status. Such tonnage would have to come largely from the swollen American merchant marine fleet, and it may well be that a part of our government's

policy in assisting in the recovery of world trade will have to come through such a sacrifice. In this connection it will be well to remember that much of our American shipping in the prewar years was subsidized, whereas for none of the others has that been true. This in itself is an indication of the possible value of permitting such other nations to resume their more economical operations, for the American exporter is the gainer, as well as the shipping nation. The importance of the necessity for shipping on the economy of at least one of these nations is easily seen in the case of Norway, where it is estimated that as high as 25% of the total population was in the past dependent on shipping for its existence.

What American policy should ultimately be ought, perhaps, to be determined in terms of the three considerations of: political prestige, economic benefit, and national defense. In some instances, these considerations are in conflict and in one instance at least the consideration is not too important. The cost of political prestige, or the carrying of American goods in American ships, has in the past, and I see no reason why it should be different in the future, been out of proportion to the cost of shipping the goods in foreign ships. I am inclined to believe that the government should put little stress on the matter of political prestige, but should rather determine its policy in terms of economic benefit and national defense. If we were concerned solely with economic benefit, we would be concerned only to get the ships into the hands of those who could best run them, regardless of nationality. We could count on the fact that they would be quite willing and anxious to sell their services, and there would probably be little need to fear that the services would be withheld from us. There will, nevertheless, not be need to work out a purely economic shipping policy, however, for there is little chance that it would be adopted. Undoubtedly the majority of the nation, and understandably so, is not as yet convinced of the future peacefulness of the world to the point where it would be willing to take the chance of being caught without ships. Whether the United States will be a more economical shipping nation after the war than it was before is a question. So far no one seems to be willing to advance the belief that we shall be more competitive with Norway and Great Britain, for instance, after the war than we were before.

The decision as to how large a merchant marine the nation should maintain for defense purposes is not easy to answer, but under any circumstance, several things would have to be taken into consideration. First, what proportion should our merchant marine bear to our navy and how large will our navy be? Second, to what extent are we going to maintain national stockpiles of strategic materials and develop the resources of the Western Hemisphere? Third, who will our allies be, where will they be located, and what kind of a fleet will they maintain? If our government should see fit to retain a relatively large merchant marine, and, if our capacity to run it were to prove no more competitive than prior to the war, it may be that the uneconomic cost of maintaining it in competition with those nations which experience a cheaper cost of operation should be properly charged to the cost of national defense. To the extent that this is done and this nation maintains a large shipping capacity the other nations will suffer, not only through lack of our purchase of their shipping services but through the, in effect, heavily subsidized capacity of our shipping to compete. I doubt that there can be a full reconciliation of the problem of defense with

the problems which have been posed here. Undoubtedly this will prove to be another of those instances where compromise will have to be made with the perfection of economic and free international trade theory and the undeniable facts of the temper of the American public concerning the defense of its shores. It is my hope that the government, when it determines on its policy of maintaining greater shipping capacity, will pin the costs and its decisions on the foregoing facts and will not resort to the nebulous means of convincing American public opinion such as is portrayed in the following quotation from the former Head of the Maritime Commission, Admiral Land, "Our goal is to have the best ships in the world and as many of them as any other nation." Such terms as "rightful place in world shipping", "as many of them as any other nation", and "just share" play little part in a cold analysis of either the economic or defense facts. We must rather talk and act in terms of those facts, and wherever possible move in a direction which will permit us to accomplish our purpose, while at the same time acting in cooperation with, and wherever possible for, the benefit of other nations and world international trade on a freely and fairly competitive basis.

Government Policy on Cartels and International Trade

As in all other parts of this paper the writer finds that it is impossible to take a direction which states flatly and unequivocally that the particular phenomena being discussed is either all right or all wrong. Though it is true, on the whole, that our government and people have been opposed, sometimes more and sometimes less, to practices which promised to restrict free competition, there would appear to be instances when the means in dispute would seem to be the correct weapon of defense or retaliation. At one point in this section of the paper such an assumption will be made. On the whole, however, the nation will probably continue to agree with the policy of its government to combat such actions as restrict free competition and substitute scarcity with high prices for abundance with low prices.

Typical objectives of monopolies, and cartels are international monopolies, have in the past been concerned primarily with keeping up prices, restricting output, allocating markets, retarding innovations, withholding technical improvements and basic inventions, and the exclusion of newcomers from the field. It is hardly a matter of dispute that high prices and restricted output are not conducive to a higher standard of living and abundance for the individual. The allocations of markets, with the resultant lack of competition, seldom lead to low prices and productive efficiency which competition might have brought. The retarding of innovations, which is used to preserve capital structure, may only be carried on at the cost of increased productivity and lower prices. Furthermore, the allocation of markets, together with the efforts to exclude newcomers, have frequently been used to establish and consolidate colonial empires of the great companies and to retard the industrial development of such sections of the world as Central and South America and Asia. In effect, market allocations amount to private systems of trade barriers, similar in their effect to high tariffs, barter agreements and currency controls.

Though, as has been intimated, the American government's attitude toward international cartels will undoubtedly remain antagonistic, there is little room to assume that cartels as such will be outlawed by this, any

other, or all nations. Our government might better direct its efforts to attacking certain of the practices of cartels, rather than to an effort to do away with them. In some ways and under certain circumstances cartels might readily play a part in the expansion and maintenance of an abundant and economically fruitful international trade. If such an assumption be made and our government should see fit to sanction limited participation on the part of American firms in international cartels, it should only be with utmost regard for the desire of the American people to maintain the free, competitive system of private enterprise. Strict safeguards must be erected against any practices or participations which would endanger that freedom and should carry with them the strongest kind of regulatory measures and means for their own enforcement. Among such safeguards might be mentioned the following: compulsory publicity, restrictions against suppression of outside producers and distributors, non-discrimination in prices and business practices, prohibition of boycotts of supply, and, the elimination of the possibility of restricting the use of new and modern productive methods. It would be impossible, in most cases, to arbitrarily set up adamant rules to be strictly applied to all cases, for, since all nations remain sovereign in their capacity to either cooperate or desist from participation in international agreements which might regulate cartels, our nation would never quite know what to expect, when, or how to deal with the circumstance under the existing regulations. There have been instances where such strict enforcement has been impossible, even within our own nation, where public opinion and pressure is apt to be less diverse.

Certain general principles, such as those listed above, should be the underlying bases for our government's decisions, but in addition, each proposed cartel practice should be examined individually from the point of view of the national and international interest. Each practice condoned should be subject to regulation and control. Every effort should be made to set up an international agency as well, in which the United States would participate, to control cartels from the point of view of international well-being. A partial recognition of the need for help to the American exporter in meeting international competition has already been granted by our government in the form of the Webb-Pomerene law, which permits the formation of export associations within certain limitations.

The various forms that cartel arrangements take may be summarized as follows: the association, the patent licensing agreement, the combine, informal understandings, straight agreements, trademark agreements, joint selling agencies, and arrangements with government fostering and participation such as was carried on, notably by Germany, before the War.

Outstanding examples of international cartels include the following: those which cover semi-manufactured and manufactured goods, which have in the past made up close to five sixths of all the cartels; those which cover minerals, and which in the past have made up close to one-sixth of all the cartels; and, those which cover agricultural products or services, such as insurance, transportation and communications, which have made up considerably less than one sixth. Some of the products in which international trade was considerably influenced by cartel arrangements are as follows: paper and newsprint, chemicals, dyestuffs, steel, optical and

other instruments, electrical machinery, natural silk, pulp, rubber, petroleum and products, fertilizers, iron scrap, pig iron, copper, tin, other nonferrous metals, sugar, coffee, tea, and meat. The grand total of the world trade which was directly influenced by cartel arrangements equalled approximately 31.85% so far as was ascertainable from the evidence which was available through documents and published material. The compiler of the foregoing material was our own Federal Department of Justice.

It is interesting to note some of the causes which have variously been advanced as reasons for the formation of cartels and to note that the most rapid growth took place during the 1920s and the 1930s, quite soon after the termination of World War I. The reasons may well prove to be guide posts as to possible future development, now that another World War has been terminated. In the twenties many firms formed themselves into cartels for the purpose of meeting new sources of competition, which developed as a result of the effort of each warring nation to make itself independent for the conduct of the war. Another was the strong tendency for European governments to sanction legally the determination of prices and production, and, in some cases, the direct effort of the governments involved to promote centralized industrial control as a means of maintaining production and employment and meeting outside competition. American participation in cartels came with the effort on the part of the American firms which sprang up during the war to replace German firms, to match their productive efficiency with their rivals, and to assure themselves of markets relatively free from serious competition. Another factor which stimulated the American firms was the lack of strict enforcement of the anti-trust laws during these years and the government sponsored cartel-like organization of American industry under the NRA.

Added inducements which might cause a further participation on the part of American firms in cartel organizations which have arisen in recent times might well be: the rapid growth of state trading monopolies; the growth of international cartel arrangements; the development of international - government sponsored - commodity agreements affecting rubber, tin, nitrates, cocoa, and other raw materials; the pressure for inter-governmental agreements to deal with certain agricultural surpluses, notably wheat and cotton; the approaching exhaustion of certain domestic supplies of strategic materials which involves increasing dependence on foreign sources, in such products for example, as copper, bauxite, zinc and oil; expansion abroad of American-owned transportation and communication services, such as air-transport, shipping, and telecommunications. Other strong present influences may be the desire to use the excess capacity left by the expansion of war industries; the centralized power of wartime controls over prices and production; the desire to maintain the wartime advantages gained in international trade, with South America, for instance; to meet the probable increase in cartelization on the part of other nations which the future may witness.

The validity of the various arguments mentioned is an indication of the truth of two facts: first, that our government will have to assume a definite and known policy toward cartels; and, second, that it will probably be necessary that the policy which is adopted be made adaptable to any of

the various circumstances which may result from the previously mentioned influences.

Whatever direction our government may take in its policy concerning cartels will find its counterpart in some of the other countries, and it is doubtful whether even an international agreement will succeed in getting very far in any effort it may make to break down the cartel arrangement completely. Great Britain, for instance, with the strong influence of Europe's acquiescence in cartel arrangements in the past, and with her fear of stronger competition from the United States and Russia, will probably stay with the cartel arrangement as a means of safeguarding her competitive position. Central and South America, on the other hand, would welcome an anti-cartel policy on the part of our government, for it could mean to them at least a partial breaking away from their status of colonial economy. The cartel question is bound to play an important part in peace considerations when they affect commercial policy, for the reduction of tariffs and the removal of quotas could become meaningless in the face of a private erection of similar restrictions. On the other hand, cartel arrangements, set up for the purpose of effectively organizing trade in any particular item, where the world could be benefited by such organization, under an international commission supervision, might at other times become worthy of consideration.

Government Policy on Reparations and International Trade

It is inevitable that any discussion of governmental policy pertaining to international trade must, under present circumstances, take into account the probable effects of any agreements to which this government may become a party concerning reparations payments on the part of the defeated nations. Certainly one of the least successful of all of the agreements which came out of World War I were those which pertained to the amount, the kind, and the conditions of reparations payments. It must be the obligation of the informed citizen to demand that when once again, as it shortly will, our government becomes party to discussions concerning reparations payments that the decisions arrived at prove both feasible and capable of stimulating and preserving international trade. The terms imposed must be such as to foster world peace and prosperity for all nations, including not only those who have suffered through direct acts of aggression on the part of the enemies of the United Nations, but realistically, also for those who remained neutral throughout the conflict and, yes, even the enemies themselves.

The occupied countries may and will with justice demand that the aggressors restore to them all of the wealth, tangible and intangible, which was taken from them. Furthermore we undoubtedly have the right to expect that the costs of war should also be borne by the defeated powers. Even the preliminary estimates, incomplete as they are, indicate clearly that such huge proportions as the figures will assume will be impossible for any nation, enemy or not, to meet even under conditions of prosperity. It is probably true, therefore, that the question will resolve itself not into one of justice but into one of economics and politics. The problem is not one of the capacity of the debtor nation to pay but rather of the

effects that the payments would have on the receiving nations, third nations, and the world economy in general. Our government must have, and various of its actions and utterances would seem to indicate that it has, to some extent at least, a clear policy as to the stand that it will take in the matter, for though this nation will not as such be the recipient of any large proportion of the reparations, the effects of the agreements which are reached will have their strong repercussions on the foreign trade of this as well as all other nations.

Among the various questions which will arise at the time of the decisions concerning the reparations payments, the following will undoubtedly occur:

1. Should the reparations constitute payment for all of the costs of war, or, should they be limited to the contribution which the aggressor nations can make toward the reconstruction of the stricken areas. In the realization that justice would demand that the aggressor pay for all of the costs, practical reasoning would seem to indicate that it would be impossible, even with the strictest of controls and pressure, to make the amount of payment involved real. The nations of the world have witnessed once already the effects of demands made with righteous wrath but impossible of fulfillment. Not only would it be impossible for the nation to economically exist upon whom the reparation demands had been imposed, but quite probably the recipient of the payments would in time find itself disposed to refuse many of the only available means of payment which would conflict with its own economic production interests. Furthermore, the renunciation of the debt on the part of the aggressor and the lack of capacity on the part of the recipient to enforce the payments where none are available would lead to a further breakdown in the faith of nations in international agreements and political capacity.

2. Should the reparations constitute monetary payment or should they be confined to goods and services? It should probably be the policy of our government to strive for agreement among nations that the payments be made in terms of goods and services, for only then could we be certain that nations would be willing to speak in terms of reparations which they, over a period of time, would be capable of accepting. Unless goods are chosen of a kind and amount which would have to be imported anyway, or not produced or imported at all, the receiver of the reparations might find his own industries affected by what would constitute competitive production. It is true, of course, that, for a time, the creditor nation may desire and need supplementary production, but in the long run, it is unreasonable to expect that the creditor nation will be willing to gear its home economy in production to the fact that the debtor nation's goods are in competition with similar goods which could be produced at home. Insistence on monetary payments would be feasible, probably, if the amounts were to be spent within the paying nation for goods which it produces and which the creditor nations need and want. Such expenditures would stimulate the economy of the paying nation and make it more capable of continued production. Insistence on monetary payment, which would not be spent in the debtor nation, however, would soon cause it to default on its payments for lack of means of payment, and might also lose for the creditor nation an export market in the debtor country because of the decrease in the latter's purchasing power.

Under any circumstance, the nation making reparations payments will, to the greatest extent, be lost as an export market for the creditor nations, for its continuing excess of exports over imports will not permit it to accumulate the necessary foreign exchange with which to purchase goods produced by the creditor nations. It is the feeling of many that such a circumstance would be disadvantageous in more than one respect, for not only would the debtor nation be lost as an export market, but the very necessity for increased self-sufficiency on its part might be contrary to the desires and fears of a world which wants the aggressor punished and made impotent. Despite this last mentioned possibility however, our government would do well to accept as its policy the insistence on payment in goods and services, if reparations are to be made, for then fulfillment would depend on the creditor's willingness to receive the goods offered, and what was perhaps the greatest obstacle to reparations payments after World War I would probably be removed this time.

3. Should part of the reparations be made through the use of aggressor nation labor? For a relatively short period such an arrangement might prove feasible. In the long run, however, certain facts would become apparent. The debtor nation would be in less position to make payment in goods to those who desire them and would in effect be making its payments only through the use of its capacity to work, rather than through the use of that capacity plus its raw materials, which would have gone into the goods. It is possible, too, that with time, the creditor might find it difficult to provide employment for all of its own nationals, let alone those added as means of reparations payments. Conversely, the nations, supposedly being punished, might find their problem made easier by virtue of the lesser number seeking employment. Some of the foregoing might be avoided by making use of the labor of the debtor nation within its own borders by having them use their own facilities and administrative organizations and supplying them with the raw materials and semi-manufactured goods to be worked upon.

4. Over what period of time should reparations payments be made? If the payments are to extend over a period of time, the creditor nations would have great difficulty adjusting the receipt of payments to their varying economic conditions and experiences.

THE POSTWAR OUTLOOK FOR PACIFIC SLOPE INDUSTRIES

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Custom prescribes that a discussion of the outlook for almost anything should start with a look back, rather than forward. A look back is especially appropriate in appraising the postwar outlook for Pacific slope industries, since in large part the growth trends of the past promise to be carried forward into the future.

Until the outbreak of the war, Pacific Coast industrial activity had

always depended heavily on processing the natural resources of the area. The canning, lumbering, paper, and petroleum industries were outstanding. Probably aircraft factories, which located here originally because of climate, and shipyards, which were established in the natural harbors, should also be included. With them, industries depending on local natural resources, including climate and harbors, accounted in 1939 for 43 percent of all manufacturing employment in the 3 Pacific coast states. For the country as a whole, natural resource-based industries accounted for only 14 percent of total manufacturing employment.

Other factories were located on the Pacific slope because of the need to be near the populations they serve. These include the bakeries and beverage makers, and the newspaper printers and publishers. A little more than 13½ percent of the manufacturing employees in the Pacific Coast States worked in such population-based industries, compared with 11 percent for the entire country.

A large number of industries are not tied closely either to natural resources or to local markets — tobacco manufacturing, textiles and apparel, most chemicals, rubber and leather products, many of the metal industries, machinery, and automobiles. In the three Pacific coast states these free or footloose industries employed about 32 percent of all manufacturing workers before the war, compared with double the proportion, that is, 64 percent, for the country as a whole.

There were, in addition, a few mixed industries — meat and dairy products, food products other than those already mentioned, stone clay and glass products, and miscellaneous — which I was unable to classify, largely because data are not available by states in sufficient detail. They accounted for about 11½ percent of manufacturing employment both on the coast and in the United States.

We have all encountered glowing reports of the industrialization of the West that is alleged to have resulted from the war. I assume that by now we have discounted them pretty thoroughly. While the light metals industries and blast furnaces represent an element of gain, by far the great bulk of wartime plant expansion took the form of new shipyards and aircraft factories for which, apparently, there is relatively little peacetime use.

The Pacific slope clearly has not been industrialized over night, nor is it likely to be. Rather the industrial growth that was already under way for many years before the war can be expected to continue, probably at an accelerated pace for a time, to make up for developments that were retarded rather than hastened during the war. The long time trend in manufacturing indicates an increase of about 15 percent between 1939 and 1947, spread evenly over the intervening years. Actually it is likely to be much more. To the extent that the war increased migration to the Pacific slope, it can be credited with indirectly stimulating population-based industries after the war and with directing producers' thoughts to West coast markets. The same can be said of war-generated prosperity, of which we enjoyed, or at least experienced, a somewhat disproportionate share.

Manufacturers in the 3 Pacific coast states expected in 1944 to employ about 40 percent more persons after reconversion than they employed in 1939. They also reported, on a survey made by the Federal Reserve Bank in cooperation with the Committee for Economic Development, that they intended to spend from 150 to 250 million dollars for plant expansion and improvement.

Industries based on the processing of extracted natural resources anticipated a growth, as measured by employment, of approximately 20 percent from 1939 to a good postwar year; population-based industries expected a 30 percent, and free industries a 60 percent expansion. Aircraft manufacturers, who originally located here because of the climate, anticipated a 70 percent gain. These figures are significant chiefly in their relationships to each other rather than in their absolute magnitudes. Statistics based on the intentions of a group of manufacturers in the middle of 1944, near the peak of their war production activities, probably are not reliable measures of present intentions. The relationship of 2 to 3 to 6 between growth expectations of extractive resource-based, population-based, and free industries, however, may well be indicative.

Industrial growth in the country as a whole comes with increased population, higher standards of living, technological discoveries and more widespread application of known techniques, and, perhaps, changing amounts and relationships in foreign trade. Another way of saying this is that the production system combines different quantities of labor, capital, and non-reproducible derivatives of land in different proportions--tending over a period of time, to use larger proportions of capital, and newer forms of capital goods. The same thing happens in a section of the country, such as the Pacific slope.

There is little doubt that, over a period of years, the country as a whole will experience industrial growth. It also seems evident that the Pacific slope will develop still more rapidly. At present this area is somewhat less fully industrialized than many other parts of the United States, but it has been gaining relatively in the past and all indications are that it will gain even more in the next few years.

Early industries were established on the Pacific slope to process raw materials extracted in the area. It pays to reduce mineral-bearing ore before, rather than after, shipping, unless the reduction process is very expensive for the quantities of ore available locally and can be performed much more cheaply elsewhere. By the same token, fruits, vegetables, and fish can be more readily shipped after canning or preserving than when fresh; lumber and paper ship better than logs; and the higher priced, refined petroleum products better than crude oil. Although additional discoveries may still be made, much of the oil and ore deposits and timber stands are under fairly complete exploitation. The same is more or less true of the fish catch, but is less applicable to agricultural production. With few exceptions, further industrialization in the extractive resource-based industries probably depends more on a higher degree of processing in this area than on increases in supplies of the extracted raw products originating in the area. As additional processing takes place, the industry becomes less clearly a resource-based one, and approaches a free industry. Some

parts of the petroleum, food processing, and lumber industries already have many of the characteristics of free industries. Generally speaking, however, these and other resource-based industries are likely to grow at a somewhat slower rate than population-based and free industries.

Population-based industries, such as local newspapers and bakeries, depend on how many people there are and on how much income these people have. On both scores the postwar outlook for the Pacific slope favors substantial increases compared with prewar years. Another section of the conference deals specifically with population trends, and still other papers may include discussions of income. In the past, per capita income in the Pacific Coast states has been considerably higher than the national average. Even if, as appears likely, this favorable differential should be diminished, income per person can, and probably will, be higher than before the war, and total purchasing power will be substantially higher.

This not only encourages the growth of the industries servicing the population of separate localities, but also excites the interest of free industries in the mass market represented by the area as a whole. Even these free industries are population-based in a broad sense, just as all industries, in the same broad sense, are resource-based. The location of any industry depends on access to both markets and to raw materials — nearness to them in terms of cost, which may differ from physical nearness.

Free industries are so classified because physical proximity to either markets or sources of raw materials either are not important, are about the same in many locations, or are outweighed by other considerations. Granted an expanding population and income, a wealth of native raw materials, adequate though not always cheap transportation, for imported raw materials, what are some of the considerations that may favor or impede growth of existing free industries and acquisition of new ones on the Pacific slope?

A satisfactory labor supply is a factor. The war has improved the West's situation in this respect. Not only are more workers here than before, but among them they have more and higher skills, including managerial skills.

Many industries need to be near a group of complementary industries or services that are familiar with each other's needs and ways of doing business. Automobile manufacture, for example, depends heavily on specialized tool and die shops and parts suppliers. The textile industry as it is now organized consists of a closely correlated group of plants and service establishments performing various functions in preparing, spinning, weaving, dyeing, marketing and so forth. A single plant could not survive apart from enterprises performing the complementary functions. An area in which these complementary plants already are established has an advantage over a remote area in which they do not exist, other things being equal. Other things seldom are equal, of course. Does the Pacific slope have a favorable inequality in the other things sufficient to offset the advantages of complementary industries in other places? The answer is not always yes.

For many industries, however, the ability of the West to provide

complementary or ancillary services has improved. Wartime industrial experience has contributed to this improvement.

Another factor that impedes the migration of industry from other areas to this one is inertia. The mere circumstance that the automobile industry got started around Detroit, and the textile industry in New England, gives these areas an inside track. Some of it has, or at one time had, a real foundation -- as familiarity with financing problems of the industry in question; presence of a labor force with training and tradition in the specialties associated with a particular product; sympathetic understanding on the part of state and local governments of problems arising from industrial waste, smoke, odor, noise, traffic, types of construction, and so forth peculiar to the operation. These same forces, incidentally, work both ways. They help hold the moving picture and aircraft industries here, for example. On balance, however, they probably hamper western industrialization. Perhaps it is significant that the Kaiser car is to be built near Detroit.

Another factor making it difficult to move an industry is non-liquidity of capital goods. A plant will rarely close down entirely in one area and move its equipment to another. Rather the new plants of an industry will be located in the new area. Older firms will build branches in the new area, often equipping them to make only part of the parent company's line of products, or to perform only part of the manufacturing processes. West Coast examples of such branches, in the steel, electrical equipment and appliance, automobile, and other industries come readily to mind. These branches may grow more rapidly than the home plant until in time they dominate the enterprise. An expanding industry can make a geographic shift more easily than a decadent one, since the former must in any case expand plant capacity somewhere, and if there are no further advantages of large scale production to be realized at the home site, the expansion might as well take place elsewhere.

A declining or stable industry can rebuild elsewhere without severe capital loss only as its old plant and equipment wears out. If there is little plant investment, or if it is a single process, this need not be too serious a consideration. But if the process is highly complex, involving different kinds of heavy equipment, it is unlikely that the entire plant will need replacement simultaneously. Even if one machine wears out, other immovable equipment may be quite adequate and too costly to abandon. So the new machine is installed in the old location. If technological advance gives the new machine, taking up no more room and perhaps costing less than the old, a greater output, even an expanding industry may find it difficult to do its expanding in a new area. This may account in part for the fact that, until the RFC financed them, there were no blast furnaces on the Pacific Coast.

In time, however, even declining industries can and do migrate. The movement of cotton textile manufacturing from New England to the Carolinas demonstrates this. It is unlikely that a very heavy industry, such as steel mills, could have made a similar move as readily, if at all.

The degree to which labor is unionized sometimes weighs heavily in determining whether or not a plant will locate in one area rather than in another. San Franciscans may be unusually sensitive about this point. The matter of open shop versus union town is not as simple and straightforward as protagonists and propagandists would have us believe. Many times the decision apparently turns more on personal likes and dislikes of individual plant managers than on clear cut, industry-wide economic considerations. Metal working plants thrive in San Francisco, and continue to come there despite a strong and rough machinists' union in the Bay area and the best efforts of the Los Angeles Chamber of Commerce. Metal working also does well in southern California. But the healthy state of the industry around San Francisco suggests that labor productivity is as important a determinant of labor cost per unit of output as hourly wage rates and an allergy to union organizers. On the other hand, the New England cotton textile industry shifted toward the south chiefly to enjoy cheap, docile labor of low productivity.

The war has somewhat changed the arguments revolving around the comparative advantages, from an employer's viewpoint, of union versus non-union labor. If the organization of labor is accepted as an accomplished fact, as it was even in Los Angeles during the war, less labor unrest may be experienced in the long run in a town with a more mature labor movement than in one which still questions the constitutionality of the Wagner Act. In any case the problem is country wide. Most industrial centers of the East are unionized, and the closed shop reputation of many West Coast cities need not affect the industrialization of the area in either direction.

I should like to digress briefly at this point to attack two or three fallacies that have had at least minor currency in recent years. One is that trans-Pacific trade will result in an overnight industrialization of the West Coast. In the long run -- in my opinion, the very long run -- manufacture for export may come to be of considerable importance. While the bulk of our trans-Pacific exports have been manufactured or semi-manufactured goods, most of them were produced outside the Pacific slope. Transportation advantages of locating industries that produce goods for export near Pacific Coast ports can very easily be over-emphasized. The difference between water rates from the Coast, and through rail-water rates from middle western or eastern manufacturing centers commonly is insufficient in itself to overcome greater efficiency of production that middle western and eastern plants may enjoy. If other factors determining relative geographic efficiency are fairly evenly balanced, however, minor advantages in transportation rates might tip the scale in favor of West Coast location of plants expecting to sell a substantial part of their products for trans-Pacific export.

Great enthusiasm for an immediate boom in private export trade appears to be unwarranted. Before the war Japan was our best customer in the Pacific. A devastated Japan is unlikely to be a better customer now than a martial Japan, preparing for conquest, was before the war. Nor are China's 450 million impoverished inhabitants likely to become able to buy large quantities of our goods in the near future.

As the Pacific Coast becomes more highly industrialized, a higher proportion of our manufactured exports could be expected to originate here, but this is not the same as saying that Asia's and Oceania's great need for the ordinary necessities and comforts of life, in other words, their poverty, will bring about a rapid industrialization of the West Coast.

The Wall Street myth is another old time favorite of the West. Control of the money bags by a little group of fat capitalists in New York banks does not impede industrial developments west of the Hudson, or even west of the Mississippi. This is not to say that many decisions affecting West Coast branch plants are not made by eastern boards of directors. But both credit and security financing are as readily available to western industrialists through western banks and underwriters as to eastern industrialists of like size, standing, and prospects. I occasionally play golf with a man who is a little older than I. Not long ago he had a particularly bad day. He finally broke after a succession of poor shots and remarked with a deep sigh, "I'm not the man I used to be", then, in a sudden burst of delayed honesty he added, "and furthermore, I never was". To some extent the same can be said of the Wall Street myth.

Geographic specialization works both ways. It may be difficult for a westerner to conceive of any other section of the country having advantages, other than unnatural and artificial things such as inequitable freight rates or monopolies, but it is so. To argue that the Pacific Coast should produce all it consumes is as absurd as to maintain that Illinois, Indiana, and Michigan should raise their own oranges. We have had examples of West Coast companies moving away from this area with products that had been developed here. The Caterpillar Tractor Company, founded in California, set up a branch in Peoria, Illinois, which now outproduces the original home plant. Against this example one can set many operating in the other direction. Two of the leading calculating machines are made in California, although the great market for such equipment is in the East. Nevertheless, the manufacturers plan to increase capacity in their West Coast plants as soon as materials become available. Jantzen swimming suits, Pendleton shirts, and Hollywood sports clothing of various makes command world-wide markets.

On balance, the various factors that have been discussed point toward an expansion of industry on the Pacific slope, both absolutely and in comparison to the rest of the country. Many of our plants are branches of eastern corporations. This, I think, will continue to be true. Indeed a number of eastern concerns, attracted by the prospects of this area, have entered it through the purchase of existing, locally owned and controlled, plants.

The resource-based industries, while continuing to grow, will lose in importance to the free industries. They can and will expand, however, through processing a greater proportion of native materials and through carrying the processing through higher, more complex, operations. As they do the latter, they will tend to acquire the characteristics of free industries. Examples are plywood manufacture by the lumber industry and the complicated products now made by West Coast oil refineries. The

refineries, furthermore, already have imported Texas oil as a war measure and are likely some day to obtain much if not most of their crude by importation from abroad.

Population-based industries likewise will grow, faster than resource-based industries and probably faster than population. Some population-based industries tend to broaden their markets beyond the immediate locality and so also approach free industries. Within the printing and publishing group, periodicals (a free industry) have gained in importance compared with newspapers. The Pacific Coast already is an important center for, printing periodicals, with further expansion in prospect.

The free industries are destined to grow fastest of all. If the Federal Reserve - CED study has validity, their rate of postwar expansion over prewar activity can be expressed as 6, compared with 3 for the population-based industries and 2 for resource-based industries. Some such ratios accord with what we know of general patterns of industrialization of relatively immature but rich areas.

Industries that are expanding nationally are likely to make the greatest gains on the Pacific slope, since the problem of changing the geographic distribution of total capital investment, either through the entrance of new firms or through opening branches, is less serious when plant expansion is under way. New industries, having little dependence on complementary plants and services elsewhere, and no traditional ties, likewise are good prospects. Light industries, in which capital investment in immovable installations is not heavy, are more likely to re-locate here than heavy industries. And finally, industries in which all or most of the efficiencies of size can be reached with relatively small productive units are more likely than the great mass production industries to come, in the near future, to the Pacific slope.

POPULATION TRENDS ON THE PACIFIC SLOPE

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I have not been told who decided on the wording of the assignment with which I am to deal, and therefore have no idea what he intended me to use as a definition of the Pacific Slope. I have been careful not to inquire about either of these matters, and have consequently felt free to define Pacific Slope as I saw fit. The definition I have taken is drawn from political geography and not from physical geography, since the most convenient figures for population are given by political subdivisions. The Pacific Slope, therefore, is taken to be the states of Oregon, Washington and California — an area which includes considerable slopes away from the Pacific as well as toward it.

The trend of population in all three of the Pacific States has been consistently upward since settlement first began, but there have been great variations in the rate of increase. An examination of the increases in

population from one decennial census to the next shows large shifts from decade to decade. There is no uniformity, and experience up to any given time provides little basis for estimates of the changes which follow. This is due to the fact that migration to the Pacific Coast States has been the principal cause of population change — the excess of births over deaths has been of minor importance. At any time the migration of the future is difficult to predict, because variations in migration result from a large number of complex factors. I do not intend to discuss these factors in any detail, but I should like to suggest a rough interpretation of the major changes in the migration pattern.

All three states had increased rates of migration in the seventies and eighties, but Washington showed the greatest spurt in migration in the eighties. This was the decade in which the transcontinental railroads first reached the Pacific Northwest. Migration to all three of the states was less in the nineties than in the eighties. This may be ascribed largely to the depression of the nineties. The boom between 1900 and 1910 in the two northern states may be attributed largely to the migration of the lumber industry from the Lake States. No such simple shift explains the boom in California, but it appears that this decade saw the beginning of the cycle which has been characterized by the slogan, "California, here I come!" For Oregon and Washington the decade of World War I saw a reduction in the flow of population. In the twenties the stream swelled slightly in the north, and remarkably in California. It is significant to note that in all three states migration declined in the thirties. This may be explained primarily in terms of an hypothesis which has been implicit in much of what has been said above — that migration is stimulated by prosperity and retarded by depression.

For the country as a whole the migration which took place during World War II was the greatest which has ever occurred in so short a space of time. During the $3\frac{1}{2}$ years for which the data are available (April 1940 to November 1943) 30 states lost 3,400,000 civilians through migration to other states. This may be compared with the 1,400,000 who moved from 28 states to other parts of the country in the five years, 1935-40. The outstanding migration phenomenon of the war was the net migration in this brief period of 1,400,000 persons to California. The regions receiving migrants were the Pacific Coast states plus Utah, Nevada and Arizona; the East North Central States with the exception of Wisconsin; and a group of Atlantic Coast states which includes Florida, Virginia, District of Columbia, Maryland, Delaware, New Jersey, Connecticut, Rhode Island and Massachusetts.

An examination of the migration pattern during the war reveals where the pressures for emigration were greatest, and which areas were relatively the most attractive. Where in $3\frac{1}{2}$ years one person left for each 5.4 persons who remained, as in North Dakota; or one for each 6.1, as in South Dakota; or one for each 6.5, as in Oklahoma; the pressures to leave must be very strong. And where one person out of every four has arrived in the last $3\frac{1}{2}$ years, as in the District of Columbia; or one in 4.9, as in Nevada; or one in 5.7, as in California; the tendency toward expansion is very great.

The migration pattern of the war period was for the most part an

accentuation of prewar tendencies. Those states which enjoyed net in-migration both during the war and in the five prewar years, 1935-40, all gained a higher percentage in the shorter war period than in the five-year prewar period. With the exception of Kansas, this accentuation of prewar trends also applied to those states from which people were moving.

What were the causes of this great influx of people into the Pacific States during the war? For the most part it was the attraction of certain employment at high wages. It was a striking demonstration of the mobility of American labor under adequate incentives in prosperous times. People move in such large numbers only in response to positive economic incentives - that is, definitely good prospects elsewhere, not merely poor prospects where they are. Such positive incentives were present during the war, and explain the recent growth of population. If we are to estimate possible postwar developments we must consider what the incentives to migration will be.

I am going to take a leaf out of Drew Pearson's book and make a few predictions of things to come. I predict that there will be mass unemployment in the Pacific States in the near future, and a sharp decline in the incentive to migrate from other states. Some backflow has already occurred, enough to result in some net loss in population in Oregon and Washington. I do not expect this backflow to last for very long, and I expect it to be largely compensated by movement of veterans into the area to join other members of their families, or because, uprooted by the war, they are attracted to this area. In the longer pull population on the Pacific Coast is going to depend on economic opportunities here, and I believe that these opportunities for new migrants are going to be quite restricted for some time to come.

The wartime population growth was the result of the opportunities made available here in industry. Manufacturing employment in Washington increased from 117,000 in 1939 to 257,000 in the first half of 1943, or an increase of 120 percent. In Oregon the increase was from 83,000 to 147,000, or 77 percent, and in California manufacturing employment expanded from 381,000 in 1939 to 1,037,000 in the first half of 1943, an increase of 172 percent. This increase in manufacturing, however, was almost entirely confined to the production of special war materials, particularly ships and aircraft, for which drastic declines in demand have already occurred.

During the war over \$1,300,000,000 was spent for manufacturing plants and other facilities in the Pacific Slope states. It might seem that with all this new plant available the prospects for continued manufacturing at a high level would be bright. But these manufacturing facilities were predominantly of three types; aircraft factories, shipyards and nonferrous metals plants, primarily aluminum and magnesium. Ninety-three percent of the new facilities authorized in Washington through October 1943 was made up of plants falling into these three categories. In Oregon the percentage was 88 percent, and in California 69 percent. Convertibility to peacetime use is almost nil for the shipyards, very low for much of the aircraft facilities, and uncertain or low for many of the aluminum plants. For

these reasons serious unemployment problems in these states may be expected in the very near future, and there is little prospect of a continuation of the wartime influx of population.

My impression is that for the longer pull prospects are brighter for California than they are for Oregon and Washington. Wartime production was somewhat more diversified, and the war plants not so completely specialized. More important than these considerations, however, is the fact that the northern states are still dominated by a raw-materials economy, while population has grown in California to the point where many industries which are market-oriented are locating there, and considerable expansion of such industries may be confidently expected. Total population in the northern states is still too small to provide much basis for expansion in consumption goods industries.

The chief resource immediately available for greater exploitation in Oregon and Washington is hydro-electric power. But power-oriented industries ordinarily employ relatively small numbers of workers, and tremendous expansion along these lines is necessary if the present population is to be employed.

The population problem is primarily a problem of what the industrial future of the area is going to be. The Pacific States are an area with a low rate of natural population increase. They can grow appreciably only by migration if the prewar tendencies with respect to natural increase reassert themselves. There has been a sharp increase in the birthrate since the beginning of the war, and consequently a considerable increase in the excess of births over deaths. This is a curious social phenomenon, and one which is not easily explained. The most likely guess for the future is that the crude birth rate will recede toward its old level. It will probably remain above prewar figures for some time, however, because of the increased proportion of the population consisting of younger persons. This shift was brought about by the migration during the war, and may be continued for some time if the expected migration of veterans to this area develops.

Basically the population problem of this area is not one of births and deaths, but one of industrial opportunity. Even if population growth were to come largely as a result of natural increase it would be necessary to find the economic support for the increased population or accept a lower standard of living. The cutbacks in industrial production in the Pacific States as a result of the termination of hostilities leave these states with an economic base inadequate to support the present population. Great development of new industries is necessary if we are not to have serious unemployment, and the declining scales of living which are characteristic of areas which have populations in excess of the numbers which their economies can support at the old standards of living.

COMPETITION FOR THE CONSUMER DOLLAR

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Paper Presented By Joseph E. Gerber

During the past few years the primary competition involving the consumer's dollar has been the competition to spend that dollar. The swing back to actual competition for the dollar which will come shortly - it actually has arrived to a degree - was illustrated sharply for me less than three weeks ago in a simple, casual yet I think significant, conversation... with a cab driver in New York City.

The general strike that day in a near-by city started the conversation. The driver was concerned with the thought of general disorder that would follow if national strike threats materialized, yet his sympathies were with the strikers because he felt keenly himself the need for, as he said, "the extra couple of dollars." Certain foods - oranges, eggs, butter - were high and hard to get, yet he said he had to have them, especially the oranges because he had a small child in the house. And got them even though he had to do without other wanted articles, including other foods.

That expresses just what's going to happen - is happening - on a mass, national scale. Certain basic needs or influences caused the cab driver and will cause others to buy certain items to the exclusion of others! He thinks the extra money will help him avoid deciding between products. It may broaden the list of possible items - it will not alter in the least the ever-increasing need for deciding which will be bought of many desired products or services.

Before discussing further the question of the dollar competition and various factors involved, let's take a quick look, as background, at some basic economic factors that have a definite bearing or influence on the subject. Tabulations that will be shown have been developed by Arno Johnson, Director, Media and Research, J. Walter Thompson Company, New York. While possibly not new to many of you, the material has such significance and worth at this time as to warrant presenting it briefly.

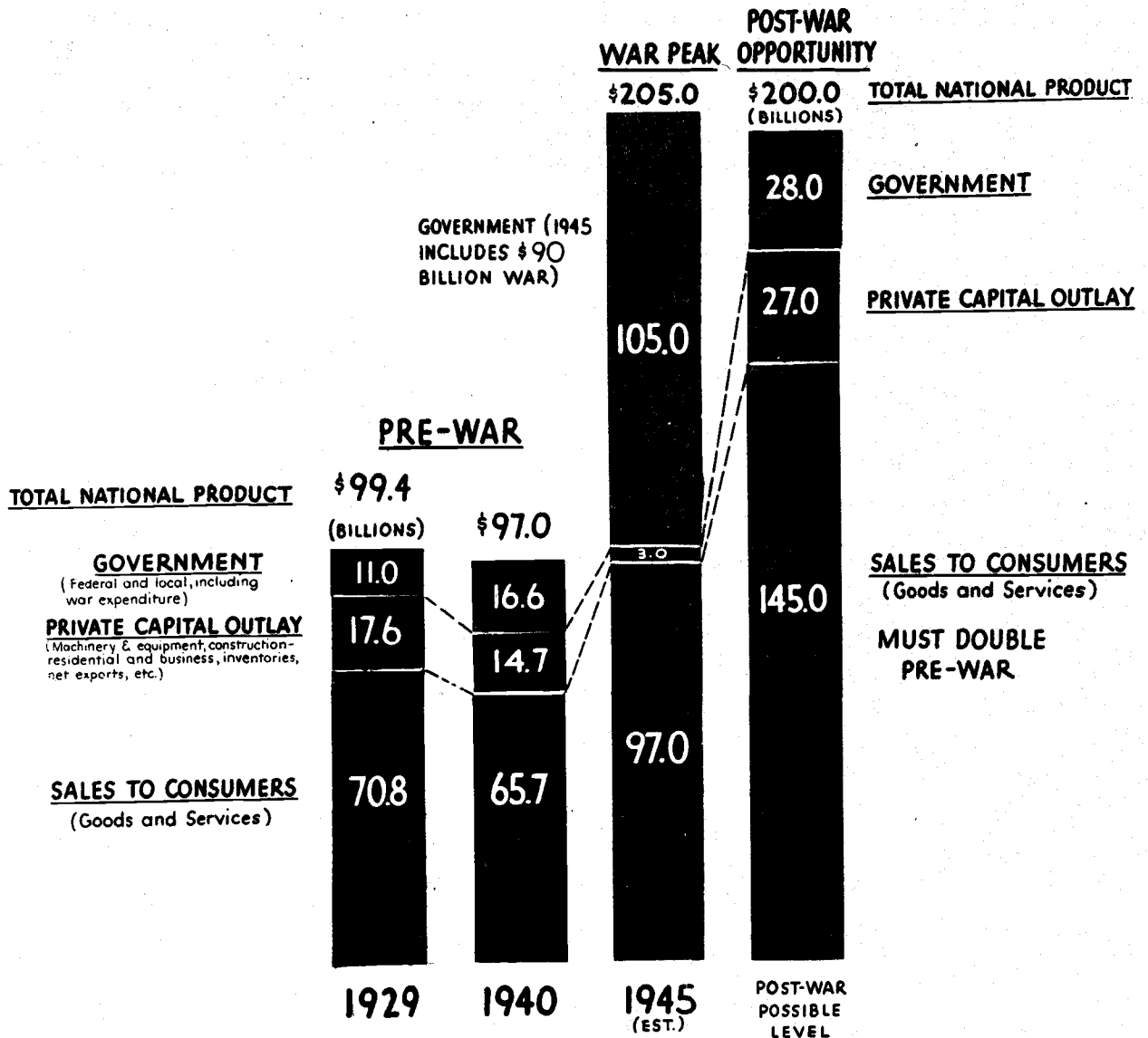
Here is a chart that shows our war productivity (1945 estimates) compared with the two best prewar years, 1929 and 1940. Total production doubled, with a war production of nearly 100 billion added to an all-time civilian consumption high of 97 billion. This was done with 52 million employed as compared with 46 million in 1929 and 1940 and probably 57 million seeking postwar employment. A total production of 200 billion of goods and services.

Apart from the share of production taken by government and for private capital formation, there would need to be a consumer demand for 145 billion of goods and services. Otherwise there would not be absorption of the entire production. On this basis, prewar civilian consumption would have to be doubled.

These figures are presented here just for one purpose - to show that there is a real opportunity for expansion of our domestic market. The importance of this in our broad consideration of selling and distribution and the strife for the consumer's dollar is apparent.

Chart 1

POST-WAR MARKET OPPORTUNITY PROVIDING FULL EMPLOYMENT-DISTRIBUTION OF TOTAL OUTPUT OF GOODS AND SERVICES



SALES TO CONSUMERS

Non-durable and semi-durable goods	\$36.4	\$34.4	\$60.0	\$75.0
Durable goods	9.9	7.4	6.0	23.0
Services (housing, transportation, utilities, etc.)	24.5	23.9	31.0	47.0
Total	\$70.8	\$65.7	\$97.0	\$145.0

Here is illustrated the way in which production creates the purchasing power to absorb the goods and services produced.

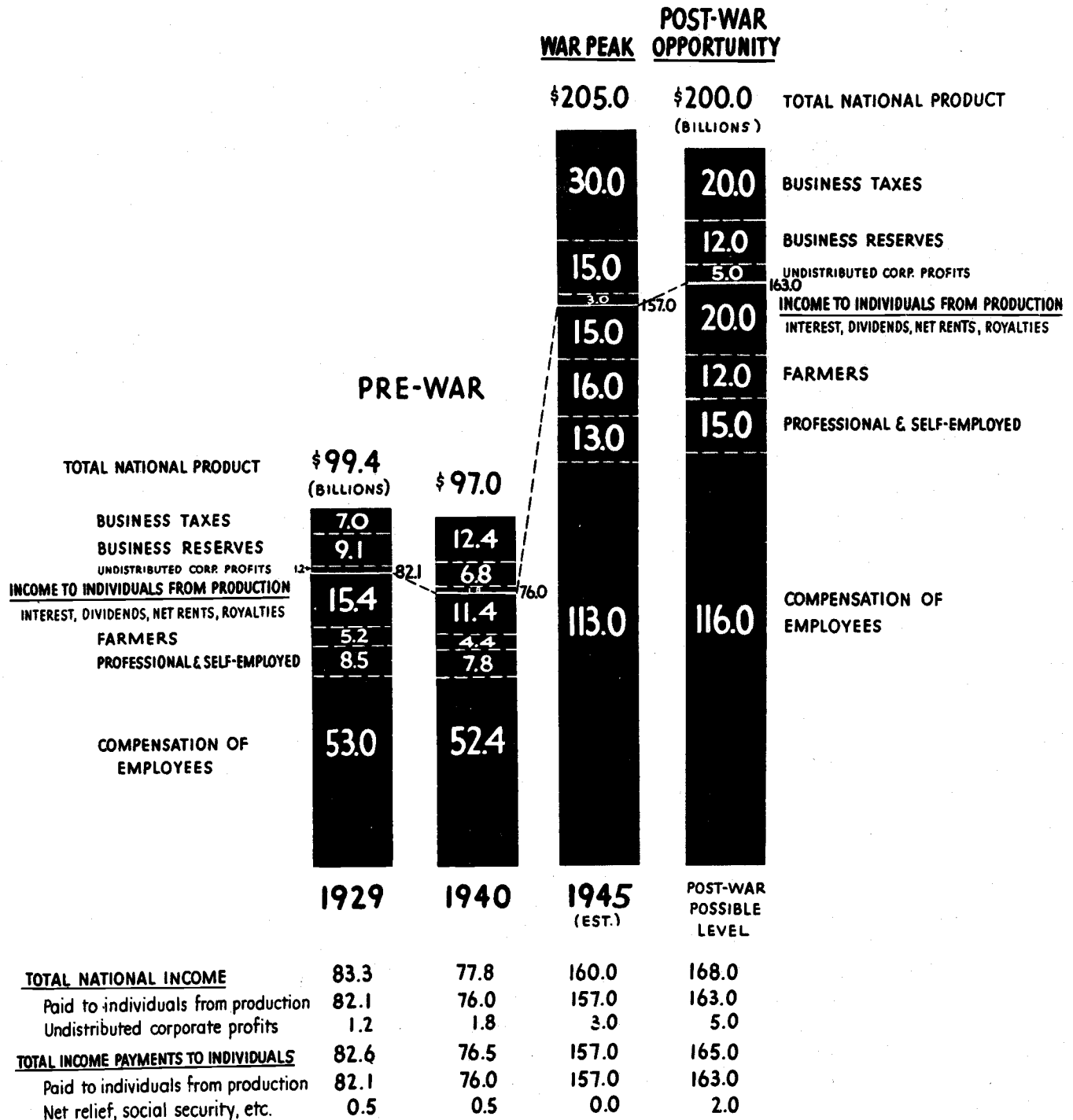
The \$200 billion national product visualized under postwar opportunity could provide a \$168 billion national income with total payments of \$165 billion in income to individuals.

It is apparent then, that it is entirely possible for consumers in the United States to have sufficient income through production of 57,000,000 persons efficiently employed to increase purchases to \$145 billion annually - amount required for support of a \$200 billion economy.

Chart 2

HOW PRODUCTION AT FULL EMPLOYMENT CAN PROVIDE THE INCOME FOR INCREASED POST-WAR LIVING STANDARDS

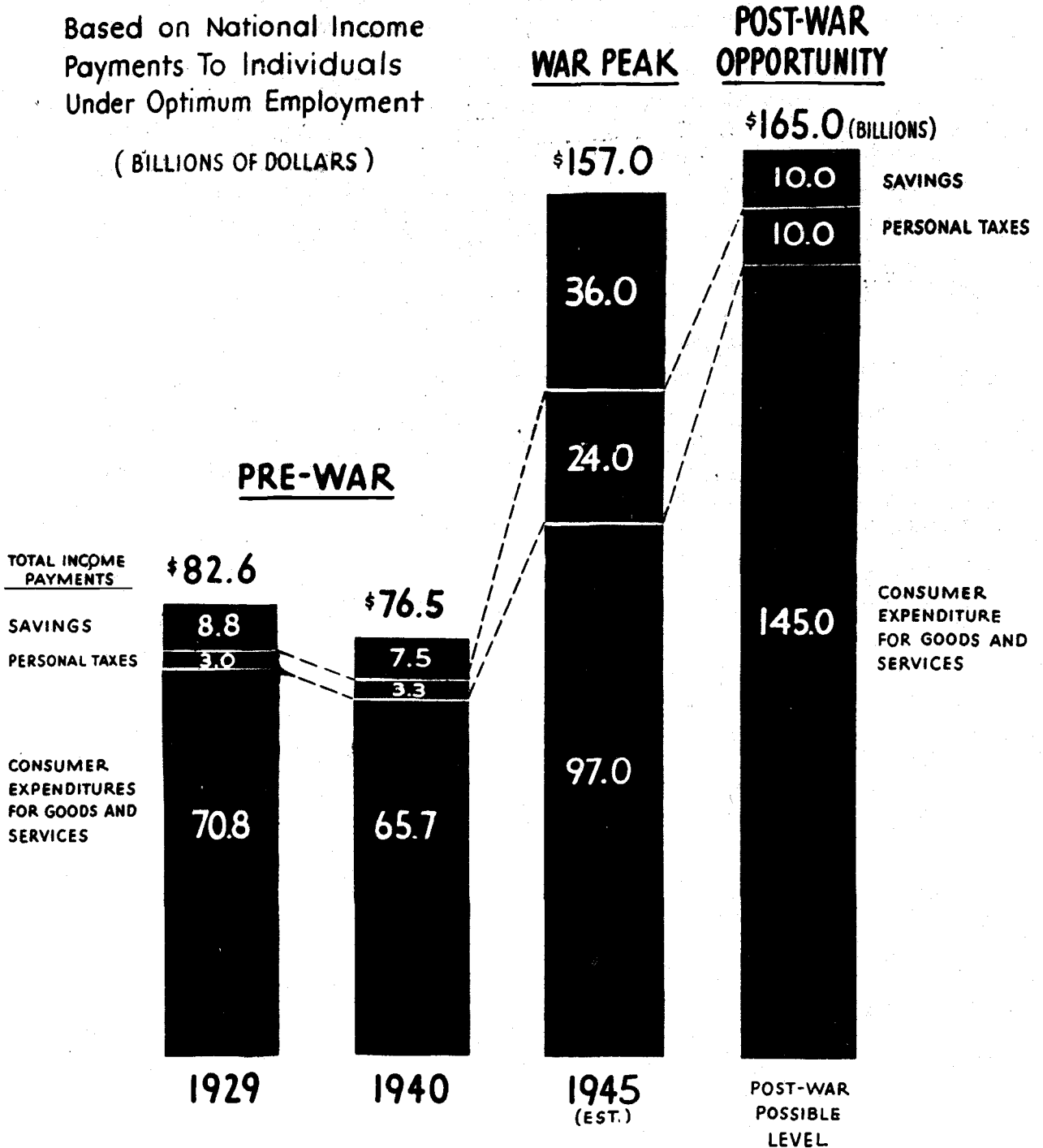
DISTRIBUTION OF GROSS RECEIPTS FROM PRODUCTION



Now one last table on this subject. Here we can see that \$165 billion income opportunity to consumers in this postwar period would allow adequately for taxes and savings while permitting the doubling of consumer purchases.

Chart 3

POST-WAR OPPORTUNITY FOR INCREASED LIVING STANDARDS



As you will note and as is well understood, there has been a huge accumulation of savings. There has been a tendency to link this savings back-log to the pent-up demand for consumer durable goods as an indication of a heavy buying session early in our present reconversion period. Actually much of these savings are not in liquid spendable form. In addition it is probable that savings will be held as a back-log against emergencies with present unemployment conditions tending to intensify this holding desire as well as causing some dissipation of holdings.

Real value of these accumulated savings seems to be that their possession will give the confidence necessary to permit from current earnings the free buying needed in an expanded economy.

We have now seen evidence to indicate that the United States can produce and consume enough in peacetime to employ all the people who apparently will want to work with an increased average standard of living. Please bear in mind that these charts were not prepared or presented as predictions of what is going to happen during the next year or so. They have been purposely detached from their context, without attempt here to develop the reasoning which is actually behind them, so as to show that we have the makings of a highly competitive drive to sell consumers more goods than they have ever before bought and used.

Now, can our people actually double consumption without raising general standards of living beyond reasonable levels?

A glance at this table which compares the average standard of living of families with \$25 and \$50 a week income, shows that this end is attainable on a very reasonable basis. The \$25 a week family was typical of prewar prosperity while at present production levels the \$50 a week family becomes typical.

Increased demand for goods and services of all types is possible for all families under the \$5,000 a year if increased income comes to these families.

CHART 4

EXPANSION OF MARKET FOR CONSUMER GOODS AND SERVICES

Doubling of national consumption of consumer goods and services is entirely possible in a post-war high level economy of a \$200 billion national product. Consumption can be increased if purchasing power is maintained through full employment at present levels of productivity.

How consumption increased with family income, 1941

	<u>\$25. per week</u>	<u>\$50. per week</u>	<u>Per cent Increase in Consumption</u>
Annual Family Income group	\$1,000 - \$1,500 (51% were below \$1,500 in 1941)	\$2,000 - \$3,000 (35% were above \$2,000 in 1941)	
Total family expenditures for goods and services	\$1,155	\$2,214	92%
Food	399	695	74
Housing, fuel, light and refrigeration	217	391	80
Household operation	47	97	106
Furnishings and equipment	63	139	121
Clothing	132	270	105
Auto transportation	101	237	135
Other transportation	19	41	116
Personal care	24	47	96
Medical care	62	105	69
Tobacco	27	47	74
Recreation	33	84	155
Reading	11	22	100
Formal education	6	16	167
Miscellaneous family expenses	14	23	64

Source-U. S. Bureau of Labor Statistics,
August, 1942

Let's not think, however, that increased demand will naturally accompany more income. Standards of living at different income levels have evolved over long periods. Cultural interests and attainments are different in the different income groups.

Increasing demand to match increased productivity and thus raise income means changing ways of living through education and promotion. This then is the major task now and for the next several years of marketing advertising.

We probably will not attain for some time to come the high levels of peacetime productivity and income portrayed here. Nevertheless, it seems certain that production of goods and services of all types will be much higher than in prewar years. This table, from the Committee for Economic Developments report, "American Industry Looks Ahead," shows that all branches of industry expect a market much in excess of prewar market. From this setup, then, we have the makings of a greater competitive race to sell the consumer than ever in history.

CHART 5 -- TABLE 1

HOW INDUSTRY ESTIMATES MARKETS IN 1947 IN THE
20 CHIEF MANUFACTURING GROUPS

		VALUE OF MANUFACTURES		% INCREASE EST. 1947 OVER
		At the 1939 Price Level (Millions of Dollars)		
		<u>ESTIMATED</u>		
No. ¹	INDUSTRY	1939	1947	1939
NON-DURABLE GOODS				
1.	Food and kindred products	\$10,618.0	\$14,185.6	33.6%
2.	Tobacco products	1,322.2	2,240.0	69.4
3.	Textile and fiber products	3,930.7	4,997.9	27.2
4.	Apparel and other fabric products	3,325.0	4,136.3	24.4
7.	Paper and allied products	2,019.6	2,579.3	27.7
8.	Printing, publishing and allied industries	2,578.5	3,359.8	30.3
9.	Chemicals and allied products	3,733.7	5,907.3	58.2
10.	Petroleum and coal products	2,954.0	4,023.5	36.2
11.	Rubber products	902.3	1,329.2	47.3
12.	Leather and leather products	<u>1,389.5</u>	<u>1,699.3</u>	<u>22.3</u>
TOTAL NON-DURABLE		\$32,773.3	\$44,458.8	35.7%
DURABLE GOODS				
5.	Lumber and timber basic products	\$ 1,122.1	\$ 1,412.8	25.9%
6.	Furniture and finished lumber products	1,267.7	1,872.5	47.7
13.	Stone, clay and glass products	1,440.2	2,062.6	43.2
14.	Iron and steel and their products (except machinery)	6,591.5	9,052.4	37.3
15.	Nonferrous metals and their products	2,572.9	3,710.1	44.2
16.	Electrical machinery	1,727.4	2,698.3	56.2
17.	Machinery (except electrical)	3,254.2	4,961.1	52.5
18.	Automobiles and automobile equipment	4,047.9	7,117.6	75.8
19.	Transportation equipment, (except automobiles)	<u>882.9</u>	<u>1,539.1</u>	<u>74.3</u>
TOTAL DURABLE		\$22,906.7	\$34,426.5	50.3%
20.	MISCELLANEOUS INDUSTRIES	\$ 1,163.0	\$ 1,630.3	40.2%
GRAND TOTAL (all manufacturing industry)		\$56,843.0	\$80,515.0	41.6%

1. These are the numbers by which these 20 manufacturing groups were designated in the 1939 U. S. Census of Manufactures.

Now let's look at some factors that enter into consumer purchase decisions.

Durable consumer goods and consumer soft goods both compete for the consumer's dollar yet there are distinct differences in consumer attitudes and purchases of these two broad types of goods. Our primary concern here is with non-durable products - foods and similar items of frequent purchase. But let us first examine briefly the durable goods question.

Purchase of durable consumer goods represents a capital investment that, with most families, is not quickly made and not on impulse. High cost, at least relatively, results in comparison between brands or makes on a careful basis. Family discussions prior to purchase are the rule, which makes necessary a knowledge of who is interested and why. Market survey work is indicated.

Purchases are generally on a family unit basis which makes the current family trend of particular interest. (Families are increasing in number at about twice the rate population is increasing). The fact that the size of families is getting smaller needs consideration as regards the capacity and type of many durable items.

Competition for the consumer dollar comes not alone from the various brands of one product but also from other product lines. A family may need a washing machine and a refrigerator, yet the average family may not be in a position to buy both within a short span of time. Thus, the washing machine competes with the refrigerator for sale. Producers need to give plans in other lines at least a passing thought when setting up their own.

Consumers will go, of course, much farther to purchase an item such as a stove than they will a small convenience item. Nevertheless, the manufacturer with sales outlets distributed geographically to roughly parallel population concentrations finds himself in an advantageous competitive situation. Costs of selling, also, tend to remain at minimums on this basis.

Decision to buy a capital goods item may be affected by seemingly unrelated factors. A decision to travel or spend a vacation someplace may remove a family from the market for an item simply through the new allocation of funds. Or an interest in some form of recreation may induce a capital-goods purchase that otherwise would not be thought of. Present interest in travel and recreation is at record levels.

Advertising and promotion enters largely into durable goods purchases. Copy both develops desires for brands or makes of a specific product and also for the type of product itself. Studies have shown that some copy has caused many purchases.

Now let's examine some of the reasons people do or do not buy convenience items. The small initial cost of such products makes them susceptible to rather sudden shifts and influences not generally operative on higher-cost, infrequent purchase goods. One or more of the following influences are operative in practically all purchases of convenience goods.

Health Considerations: Over a period of years we've seen, through public and manufacturer education, certain types of diets - and foods - come to the fore, because of health qualities. We've also seen certain brands of a product because of known, or inferred, health superiorities take over at least a portion of a market formerly held by an established product.

Racial habits cause products to sell well in some areas, poorly in others. This has required careful consideration in market plans over the years but it is probable that this factor will be of diminishing importance from now on, as the percentage of native-born whites is definitely increasing.

Family pressures of one type or another motivate many purchases. It may be the simple request of a child for some item that takes his fancy. Or, it may be the underlying desire of a parent to get something this is good for, or will be liked, by a child or some other member of the family. It is impossible to discount either of these pressures.

A desire to follow a custom or practice of another cultural level has proved to be a factor in the purchase of many items, particularly of a semi-luxury nature. I have reference particularly to use of a product that requires addition of a practice foreign to the cultural group represented by the buyer.

Geographical differences and habits are another factor in consumer purchases. A certain type of product may go well in, say, the South yet because the people in the North are in the habit of using a different type of product, its sales will be disappointing. Difference in habits between regions should be canvassed carefully.

Competition from local products frequently causes spotty sales results for national or regional products. Unless this local competition is known and allowed for, sales may be considered unaccountably low.

Extent and type of distribution frequently results in the purchase of one brand of a product rather than another. It is found often that a brand seems to have good general distribution yet is missing many sales because the product has much of its distribution through a type of outlet in which the product is not most generally sought by consumers (butter in a meat market, for example). A product sold generally, yet without distribution at least as wide as competition, is at a disadvantage.

Special deals, premiums, are important factors in inducing trial of a product or brand. An important point to analyze is the extent to which new users are secured and held in this way.

Advertising is a definite influence in purchase of items on a trial or sampling basis.

Store displays both clinch a sale for a brand originally wanted and swing sales away from that brand, depending of course as to whether the particular brand or another is on display. Perhaps no other single factor

has more influence in consumer purchases, particularly of food items.

Product sampling, although relatively expensive has proved a major influence in securing later sales.

Any discussion of the reasons that underlie consumer buying should at least very briefly consider research.

Market research of various types has proved itself an essential of marketing and advertising. Through use, it is possible to determine many of the reasons why a product is or is not bought. Useful for all types of merchandise, it is extremely valuable for products that are bought rather frequently and for which patterns of consumer buying are subject to change due to outside pressures. No marketing promotional program is complete without an adequate, periodic consumer research program.

Both straight trade and consumer investigations have a definite use and place in the business of finding out why merchandise does or does not sell. Certain inadequacies in these, for all purposes, have been felt and an additional way to establish consumer actions has been developed. This is the Consumer Panel, one of which has been operated for several years by J. Walter Thompson for its clients.

The Panel provides a continuing record of purchases of products in different commodity classes by a cross-section of families, so that a continuous case history of the family's purchasing of these products is developed. Reasons why purchases are made are recorded, which permits various analyses and deductions. The Panel helps provide continuing information about the actual buyers of a manufacturer's product so that plans can be formulated and carried out.

Being able to see a cross-section of his market and how it reacts not only to his own efforts but those of his competitors, and also to all manner of outside stimuli, puts a producer well along the road toward securing a fair share of the consumer's dollar.

ADJUSTING AGRICULTURE TO PEACETIME CONDITIONS

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Paper Presented By Henry W. Stippler
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This discussion of adjustments needed to fit peacetime conditions is concerned largely with the situation beyond the immediate conversion period. But the production and market situation that develops in the transition years will to some extent influence the changes that will be

needed under more normal peacetime conditions. After five years of all-out production for war needs, farmers are looking forward to 1946 as at least the first step in our return to peacetime conditions. Yet, to some extent, production in 1946, and perhaps also in 1947, will still need to be geared to war and relief needs for food in addition to high civilian market demands.

A large volume of food and other agricultural products will be needed for relief and rehabilitation in the next two years. Arrangements for meeting these needs more adequately will be facilitated by recent appropriations to UNRRA and by other action on the international front. Such action will help to relieve human suffering, promote stability and, at the same time, help to develop markets for our products in later years. From a very selfish standpoint it appears that since we have suffered nearly a million casualties and spent nearly 300 billion dollars to fight the war it is good business to spend some additional money to help the devastated countries get back to a self-supporting basis as quickly as possible. As far as agriculture is concerned, such exports will be the best possible assurance of markets for high level production in the transition years. Thus, these rehabilitation needs and high civilian demands should result in a high-level consumption to match production in the immediate future. This will furnish a favorable setting for the peacetime years that lie ahead.

Peacetime Production Levels

Perhaps the best place to begin discussion of agriculture in the post-conversion period is to consider the level of production that is likely to prevail. The war period brought a sharp upward swing in farm production. In 1944 and again in 1945 gross production averaged almost one-fourth more than in the prewar years 1935-39. If we leave our farm-produced power and count only the production available for human use, the 1944-45 output is nearly 30 percent higher than prewar. Some of this increase can be attributed to more favorable weather than in 1935-39. But even under average weather conditions, the 1944-45 level of farm output for human use would run at least 20 percent above the years 1935-39. This is an unprecedented increase in such a short time. We, therefore, need to consider carefully how it was brought about. Considering the forces other than weather, the more important factors in this increase are:

1. Shifts from animal to tractor power.
2. Increased use of fertilizer and lime.
3. Improved crop varieties.
4. Increased use of cover crops and other conservation practices.
5. Pest and disease control
6. Better feeding of livestock.
7. Shifting to more intertilled and more productive crops.
8. A small increase in the area of land used for crops.

It was the combination of these forces rather than any one of them alone that caused the wartime production revolution. But the foundation for that revolution was laid in the years between the two world wars. Farm output would have increased in the interwar period if the effects of

technological advances had not been dammed up by the drought and depression of the 1930's. The return of favorable weather conditions, high prices and incomes, and the patriotic urge for increased production, broke the dam and our reserve of production capacity was released. The effect on farm output was comparable to a flood that is caused by a break in a large reservoir.

The major question concerning peacetime production levels is: "Will the volume of production recede after the wartime flood, or will it tend to remain at flood stage?" Many people argue that the level of farm production will recede considerably after the war emergency has passed. They say that a large part of the wartime increase was due to favorable weather, and that most of the remainder was caused by increasing the area used for crops and by shifting to more intertilled and more productive crops. Production increases caused by these forces will recede in the same way that flood waters recede when the water previously accumulated in the broken reservoir has gone down stream. One can readily concede that these forces tend toward reduced production in peacetime years. However, favorable weather accounts for no more than one-fourth of the wartime expansion; and more land in crops and more intertilled crops explain only a minor part in the increase in production.

When we consider the other forces that are back of the wartime increase in production our flood analogy breaks down. Their effect on production is irreversible. It is more comparable to the diversion of another large stream into the main channel than to the effect of a break in the reservoir. Once these improved practices have been adopted, farmers are not likely to discontinue their use.

In the years since 1920, over 50 million acres of cropland and many million acres of pasture land have been released from production of feed for horses and mules and made available for production for the market. The land released from the growing of feed for work animals in this period would be sufficient to feed over 16 million head of cattle.

In the next two years, farmers are likely to buy new tractors and complementary equipment in greater quantity than ever before. This means a further release of land from production of horse and mule feed to the production for market.

Use of commercial fertilizer increased tremendously in the 1920's. It dropped back in the depression of the early 1930's, but increased again to new high levels in 1937. In 1944, the use of plant nutrients in the form of commercial fertilizers was 85 percent higher than in the prewar years 1935-39; and in 1945 it was about 94 percent higher. During the war, fertilizer has been used on crops and in areas where its use was previously unknown. As a result of their experience, farmers are likely to extend its use if economic conditions are at all favorable.

Hybrid seed increased corn yields about 20 percent over openpollinated corn and added 400 million bushels to the 1944 corn crop. Many other improvements in crop varieties are now in the introduction stage, for

example, Lincoln soybeans, and some new varieties of oats. One should expect continued progress in plant breeding and introduction of higher yielding varieties.

Promising methods of pest and disease control have been developed during the war, and these will have an effective impact on postwar production. DDT and 1080 are only partially tried. Also, wartime scarcities of insecticides and equipment are no longer a handicap.

The improved practices that have been adopted for the feeding and care of livestock are also likely to continue if conditions are at all favorable. Livestock production will also be stimulated in many areas by the return of skilled labor from the armed forces.

It seems evident that the forces which tend to push agriculture in the direction of increased output for the market will outweigh those that tend in the direction of decreased output. The exception to this statement is the possibility of extremely unfavorable weather. If we should experience a drought such as in 1934 or 1936, farm production might drop as much as 20 percent in any one year, but it would rise again with the return of favorable weather.

Production in Relation to Market Outlets

Thus it appears inevitable that agricultural production will remain high in the peacetime years that lie ahead -- at least at wartime levels. A rough balancing of potential production with prospective market outlets indicates that production may out-run available markets for many commodities even under favorable economic conditions. New markets will need to be developed. And shifts to more readily marketable commodities will be necessary. Under conditions of economic prosperity new market outlets can be found, and production shifts will be manageable. But, if unemployment and depression conditions are experienced, chronic surpluses will develop in several lines and agriculture will be traveling the road of economic adversity.

Agriculture has a tremendous stake in the achievement and maintenance of economic prosperity in this country and abroad. Farmers need export outlets for many agricultural products if high-level production is to find a peacetime market at satisfactory prices. They also have a vital interest in the maintenance of domestic consumer purchasing power at high levels.

Evidence of the effect of high consumer purchasing power on markets for farm products is found in the wartime level of civilian per capita food consumption. Despite rationing and other wartime restrictions, civilians consumed 11 percent more food per capita in 1944 than in the prewar years 1935-39. Preliminary figures indicate that consumption in 1945 was 9 percent above prewar levels. It would have been higher if more of the high-value and high-quality foods had been available. This record of wartime food consumption is very encouraging for the future. It indicates that consumers stand ready to buy more high-value, high-quality food when they

have the purchasing power. In World War I civilian per capita food consumption did not rise above the levels of the prewar years. Perhaps part of the reason for this difference in the level of food consumption in the two war periods can be found in the stabilization of food prices in relation to earnings during World War II.

Consumption of non-farm products is also greatly affected by the level of consumer purchasing power. If a large volume of both domestic and international trade can be maintained, farmers can look forward with confidence to the peacetime years ahead. On the other hand, depression conditions would mean that supplies of farm products would be pressing heavily on shrinking markets and farm incomes would be drastically reduced.

In the inter-war years there was much discussion of "adjusting production to market demands." Sometimes this phrase was used to urge a shift out of one product that was pressing heavily on the market into some other product that had a more favorable market outlet. Adjusting production to market demand in this way was sound advice as long as there were other products that had better market outlets, but in the depression of the 1930's prices of all products were low and shifts from one product to the other did not solve the low-income problem. We then began to talk about adjusting production to market demands in relation to adjusting the total volume of production to a shrinking market outlet. Production of some products was curtailed but, aside from unfavorable weather conditions, the total volume of farm output was not reduced — largely because farmers used their resources to produce other products in place of those that were curtailed.

The experience of the 1930's indicates how difficult it would be to attempt to adjust the total volume of farm products to a shrinking market outlet. Farm production is responsive to increased prices and income on the upward side, but it is quite unresponsive to depression conditions on the downward side. It is true, of course, that the use of some improved practices, such as commercial fertilizer, might be reduced under depression conditions, but this tendency might be entirely offset by a landward movement of unemployed workers which would result in greater pressure of population on land resources. Farmers would not be able to shift back to horses and mules. And certainly no one would advocate using open-pollinated seed corn, or similar backward steps in efficiency. The only means of controlling total output would be to require that part of the land be kept idle. This would mean rigid rationing of land and labor resources.

Adjusting Market Outlets to Achieve Economic Production

If we cannot reasonably adjust the total volume of production to a shrinking market outlet, we should explore the other side of the equation and see if it is possible to adjust market outlets to high-level production. From the standpoint of national welfare, food is needed just as much in depression as in prosperity and farmers make a contribution to stability by maintaining the volume of production in times of depression. The

objection can be made that farmers should not be asked to subsidize the rest of society in depression periods. This objection is valid and some means should be found to adequately compensate farmers for the food furnished to hungry people.

The Food Allotment Plan that is now under discussion may be a partial solution to that problem. It suggests that food-purchase coupons be made available at prices that would make it possible for all consumers to purchase food enough for a minimum adequate diet with 40 percent of the family income, but food prices would not be reduced below 25 percent of market prices. This approach should receive wide discussion as a means of providing food for hungry people regardless of purchasing power; and at the same time bolstering farm incomes when purchasing power goes down. Other means of increasing and maintaining domestic outlets for food products are the in-plant feeding programs, the school lunch program, and other special food programs for children and pregnant and nursing mothers.

Action can be taken on both the national and the international front to widen the channels of world trade. This will result in immediate benefit to farmers as a group. But of even more importance, it will help to preserve the peace of the world. If we want to increase exports of our farm products, we shall have to accept other products in exchange, some of which may be farm products. We should also realize that increased exports of nonfarm products will mean more employment and higher consumer purchasing power in this country.

Progress can be made in increasing the industrial uses of farm products. It is not so large an opportunity as some people visualize, but potentialities in this direction should be fostered by research and by pricing policies that make farm products available for new uses at prices that are competitive with other sources of raw materials.

All in all the possibility of adjusting market outlets to high-level production seems to hold more promise than adjusting total production to a shrinking market outlet. We must bear in mind, however, that assuming the same price level and national income, people will buy more goods at low prices than they will at high prices. In other words, if we are to maintain a large volume of farm production, we need to price it in a way that will permit development of potential markets in industry and for export as well as for domestic food consumption. Farmers cannot afford to price themselves out of a large segment of the market for farm products.

Making Abundant Production Profitable

Farmers want to produce both abundantly and profitably. They want to make full economic use of their resources. The nature of farm costs makes this course the most profitable one for individual farmers, but it results in high-level production; and markets at satisfactory prices must be found for a large volume of farm products if farmers are to produce abundantly and remain prosperous. The best assurance of large markets for abundant production is the maintenance of a high-level of economic activity in other sectors of the economy. In other words, abundant agricultural production should be balanced with abundant production of other goods and

services: We have also seen that production needs to be in balance within agriculture itself. For example, if we are producing too much wheat and too little meat in relation to market demands, some of the resources that are used in wheat production should be shifted to the production of meat animals. Likewise, when too many farm products are produced in relation to other goods and services some of the resources should be shifted from agriculture into other employment. Practically speaking, this means that some workers formerly employed in agriculture should be given assistance in finding non-farm employment.

Since pricing policies that encourage larger markets for farm products need to be developed, farmers will need assistance in increasing their efficiency of production and reducing their costs in order to maintain their incomes at satisfactory levels. The current high level of production was largely achieved by tremendous improvements in production efficiency. These improvements reduced the cost of producing farm products. Further progress can be made in this direction. Farmers who adopt improved practices usually can count on immediate gains from two sources; first, the wider margin between cost and selling price; and second, the larger output per farm that usually is associated with such improvements.

Not all improvements that reduce costs have the effect of increasing output but a large number of them do. Hybrid seed corn is a good example. If adoption of hybrid seed results in a 20 percent increase in corn yields per acre and 15 percent lower cost per bushel of corn, the farmers who first use hybrid seed gain a great deal. These gains are held until adoption becomes general enough to increase market supplies sufficiently to result in lower prices. In the past, the general adoption of improved methods has come so slowly that progressive farmers have retained nearly all of the gains for a long time. Even when prices do go down as a result of increased production, the farmers who are using the improved practices have the protection of larger output and lower unit costs.

It is the farmer who cannot take advantage of such cost-reducing improvements that will suffer reduced income if the price goes down as a result of a larger output. The workers who are displaced by a labor-saving improvement also lose if they cannot find other jobs that are as good or better than they lost.

Assistance should be given to displaced workers in finding non-farm employment. Government aid also will be needed by many farmers if they are to take full advantage of new improvements, by adopting them quickly once they have been proven practical. In fact, one important means of making abundant production profitable is to devise educational or other programs that result in rapid and general adoption of cost-reducing practices. Such programs also should promote stable soil-maintaining systems of farming, and a well-balanced output of farm products.

Fortunately stable and soil-maintaining systems of farming involve shifts to relatively more hay and pasture, and this means more milk and meat which also are needed from a nutritional standpoint. Thus conservation and high level nutrition are harmonious objectives. But shifts in the

direction of more milk, meat, fruits and vegetables - the foods needed in a high level diet - need to be made the most profitable of the production alternatives that are open to farmers if these changes are to be carried out. It would be possible to make these shifts profitable by government aid in providing higher support prices. But these are products that consumers buy in much larger quantities when prices are relatively low, and the higher prices would cut off part of the market outlet that is essential to achievement of the goal of high level nutrition. The potential shift would be severely limited, by the restricted market outlet.

The alternative to higher prices as an incentive for needed adjustments lies in lowering the cost of producing the products that are desirable in terms of conservation and high level nutrition. We have shown that improvements in production efficiency do reduce costs and do maintain individual net farm income even when the improvements result in lower prices from increased volume. This is characteristic of an industry as well as an individual firm. Consumers, labor, and management all benefited when millions of automobiles were produced at a \$1,000 average in contrast to thousands at \$3,000. Consumers and farmers will also benefit from high level production induced by lower costs.

It would seem then that the most effective alternative to high support prices is a broad gauge program that will assist farmers with financial and materials aid, and management guidance. The latter would come from educational programs based on the experience of our most successful farmers and the results of experimental work. The goal would be stable and soil-improving systems of farming with high production efficiency. The total cost of such a program would be insignificant in comparison with its results in higher net farm income.

As already indicated technological progress means that less farm work is needed to produce an ever increasing output of farm products. Production per worker has also increased in other occupations. Today the production per worker in both industry and agriculture is 35 to 40 percent higher than it was at the end of World War I. This means that two workers now can produce more than three could at that time.

From the standpoint of potential productivity the means are at hand to provide food enough, and enough products of other kinds, to abolish poverty and squalor if we are wise enough to do it. We also have reached the stage when it is not necessary to concentrate so much of our total effort on the production of primary consumption goods. More of our effort can be centered on the services that are needed for better living. More effort can be devoted to maintenance of higher health standards and to improvement of the cultural aspects of life; and more attention can and should be given to education and to training that will enable us to learn how to live together in peace and prosperity.

It is physically and technically possible to achieve these aims, but unfortunately progress in the social sciences and in adaptation of human institutions is lagging dangerously behind progress in the natural sciences. Farmers, therefore, need protection against the possibility of recurring unemployment and depression. Insurance against the results of

disastrously low prices is required as a counterpart for the minimum wage and unemployment legislation now applicable to wage labor. This counterpart needs to be developed in such a way that it provides an income floor to farmers in periods of depression. We have already indicated that in such periods farmers make a contribution to national stability and welfare by continuing food production at high levels. Programs should be thrown into gear at such times to provide an income floor to farmers. The standards for this income floor would need to be set in terms of full-time farming. A program could be developed that would provide a minimum return per hour of labor to farmers for the amount of labor required for their level of output at average levels of labor efficiency.

Perhaps a simpler method can be devised, but the important point is that we recognize the need for protection against major price declines. Protection is also needed against weather risks, but this can be met in part by more adequate crop insurance and storage programs.

The conclusion to be drawn from this discussion seems to be that farmers probably will maintain a high level of farm production in the peacetime years ahead. This is in the national interest if it is balanced with high level production in other sectors of the economy. Under conditions of economic prosperity abundant farm production can be profitable to farmers, but farmers will need protection against the major weather and income risks in farming.

DISCUSSION PANEL

Mr. William L. Teutsch, Assistant Director, Extension Service, Oregon State College, opened the discussion panel and acted as its leader. He introduced the members of the panel to each other and to the audience.

Dr. Margaret L. Fincke, Head, Foods and Nutrition, School of Home Economics, Oregon State College
Dr. Clara A. Storvick, Associate Professor, Foods and Nutrition, School of Home Economics, Oregon State College
Mr. Joseph E. Gerber, Gerber Advertising Agency, Portland, Oregon
Dr. D. B. DeLoach, Professor of Agricultural Economics, Oregon State College
Dr. C. E. Maser, Head, Division of Business and Industry, Oregon State College
Dr. Blair Stewart, Professor of Economics, Reed College, Portland Oregon
Mr. W. M. Hoad, Research Department Federal Reserve Bank, San Francisco, California
Mr. Henry W. Stippler, Bureau of Agricultural Economics, USDA, Portland, Oregon

Mr. Teutsch stated that the major purposes of the panel were:

1. To review and summarize the excellent papers and addresses which had been given.

2. To introduce new material particularly in the field of nutrition because it has a definite relationship to the subject matter of the conference. . . the question of marketing.

3. To give opportunity for those in the audience to ask questions and participate in the conference.

As the panel progressed, discussion centered around two main subjects which are closely related;

1. Nutrition

2. Market outlets for agricultural products

- a. How they are affected by increased population
- b. How they will be affected by future unemployment
- c. The question of governmental control or assistance in marketing products.

Mr. Teutsch opened the discussion on nutrition with the question: "Do we have, as a result of research in the United States, a reasonably adequate nutrition standard for health?"

Dr. Storvick replied: "Yes. In 1941 the National Research Council surveyed this. More than 50 nutrition research workers were consulted with regard to the recommendations for calcium, protein, calories, Vitamin A, C, D, thiamin, riboflavin and niacin. It was essential for them to have that information for distribution to nutritionists in contact with civilian workers. . . social workers, etc., and later for those concerned with nutrition in the armed forces. These allowances have been adopted by the United States and Canada and to some extent in England. These allowances are a little higher than minimum safety requirements."

Having determined that such standards existed, Mr. Teutsch posed the next question: "To what extent have we here in the United States attained these nutrition standards?"

Dr. Fincke replied that surveys had been made in 1935 and 1939, but that these could not be considered representative of the whole population as they were made on native born, unbroken families not on relief. Results indicated that one-third of the families do not get food to meet the standards. They are not getting the basic seven foods which are considered the safety foods.

This indicated to the panel that we do have opportunity for expanding certain agricultural food production to assure higher standards of nutrition. Mr. Stippler commented that we must shift the emphasis from reducing production to adjusting production to those commodities which are needed. He states that there is a general tendency in agriculture now to give more emphasis to soil conservation methods. These measures imply doing more to replace fertility taken out of the soil by crops. These measures would tend to increase milk and meat commodities.

It was concluded that there are opportunities for increase of agricultural markets in the interest of better nutrition.

The factors which affect the attainment of desirable nutrition were discussed. Income and education were mentioned as the most important. More money means more food, better food and more selection. According to Dr. Fincke, many studies have shown that in some parts of the country a fair proportion of the people are underfed in amount of food.

Question asked from audience: "Do you know about how much more it would cost in terms of money to adequately feed our people? And how much more would it cost in terms of acres?" Dr. Fincke pointed out that according to a report issued by Milo Perkins in 1940, it would cost 2 billion dollars. The average income then was \$60 per family per month. Mr. Stippler replied to the latter part of the question by saying that increased acreage is not the important factor, but rather certain shifts in agricultural production which will assure the needed commodities.

Mr. Teutsch summarized that we might be able to achieve a desirable nutrition standard and at the same time assure distribution of agricultural commodities minimizing the problem of agricultural surpluses. It was also pointed out by the panel that through a slow educational process the people may be awakened to the use of foods desirable for nutritional standards, and by this surplus problems will be lessened.

Dr. Maser challenged the statement that education would have a very great effect on purchasing of foodstuffs. To quote him: "No amount of education in the world will change the people if they don't have the money."

The second main subject was that of market outlets for agricultural products. The question of the population trends on the Pacific Coast was brought up. Dr. Stewart summarized percentage figures previously given: "Percentage increase in population in Washington during the war was approximately 13%, Oregon 12%, and California 17½%. The overall increase is probably a little higher than 15% for the Pacific Coast. The population figures will be slightly higher in 1950 when the civilian population and military is adjusted." With the increase in population would come an increase in income, according to Dr. Stewart, and this would lead to an increase in the consumption of foodstuffs.

Combined with this question of population increases was the problem of the possibility of future unemployment. In his paper presented earlier in the day, Dr. Stewart predicted an unemployment period to come to the Northwest in the next few years. Several times the question was asked from the audience: "Who is going to pay for extra consumption of agricultural products if unemployment is to result?" For the most part no answer was found to this question. One member of the audience suggested that it would be the farmer who raised the crops.

Discussion of the possibilities of increasing the market for commodities due to greater population was continued. One member of the

audience brought out the point that the question of quality had been minimized in this discussion of quantity of agricultural products to be produced. He felt it would be better to pay more attention to improvement of quality of production at this time. Dr. DeLoach agreed with this approach, saying that during the war years we had a considerable deterioration of agricultural products along with other products. This was typical of other states as well. Due in part to the fact that purchasers didn't question brand names, but took what was available. He further stated that if we are to compete in markets in the postwar period, we must re-establish and improve quality which was in existence prior to the war.

The discussion continued on the subject of surplus agricultural products during a period of unemployment. Mr. Teutsch asked the question: "What are we going to do with this (surplus) food when the purchasing power declines? In comparison with the wartime period (boom period), is the per capita consumption of food in pounds much different from a depression period?" The panel seemed agreed that per capita consumption in pounds would not be very different. Mr. Stippler commented that the quality of food and choice of food eaten in depression times would be lower than in a period of prosperity. Dr. DeLoach pointed out that we must direct our efforts in a way to efficiently utilize our productive land. . . maintain a balance between food supplies and demand for food.

The panel agreed that population alone was not a major factor in the marketing outlets for agricultural products, and that unemployment will affect the quality of commodities people buy.

The last subject considered by the panel was the factor of governmental assistance or control in the marketing of agricultural products and surplus commodities. The discussion in the main centered around income floors and price floors, and the producer's views toward government assistance. Mr. Stippler was challenged on the ground that an income floor meant subsidization. He replied that it did not mean subsidization of producers. It just means that agriculture will be given the assurance of a minimum wage. An income floor is not a fixed level, but is flexible. It is a floor below which agricultural commodities cannot fall.

An opposition viewpoint was brought up by a panel member that government should not act as a price stabilizer, other than in times of emergency. It was further brought out that farmers should develop systematic schemes of marketing in which they as farmers control the flow of goods to the market to the extent that they equalize it and not monopolize it. In some places in the United States farmers are seeking this balance and attaining it.

A member of the audience challenged this method by saying that: "The farmer is dependent on some agency aside from his own to control the prices. There must be developed government action to see that fair play is given both to the consumer and to the producer. Farmers try to get together, but they can't. They try to set prices, but they can't. For the sake of the economy of the country, we must have governmental assistance in this."

Mr. Stippler then brought up the fact that a price floor, which is over a certain period of time, can be put into effect if a surplus situation arises. In this way the government would insure against wastage.

The panel was brought to a close by Mr. Teutsch. The panel covered a large scope of ground; and while it was not intended as an answer to the problems, it did bring out many views. Mr. Teutsch concluded by saying: "We don't just get things. We have to work for them. To the degree that we are willing to work and perhaps fight, we will attain the right answer."

MARKETING CHANNELS

J. O. Crawford, Executive Vice President
National Food Brokers' Association and
Merchandise Broker and Manufacturers' Agent
Los Angeles, California

When the National Food Brokers' Association received your invitation to appear on this program, it was extended of course to our own President, whose home is in the Nation's Capital. Due to distances involved and prior engagements, I have been asked to appear in his stead and tell you something of the Food Broker, how he operates, how he functions and what part he plays in food distribution.

First of all, may I thank President Strand, Dean Schoenfeld and Dr. Moore for having given us the opportunity of telling you about the Food Broker, for we, better than anyone else, know how little is known of our vocation outside of the food business.

We know from personal experience that you men from the Colleges and Universities and especially the economists, have played very important roles in Washington during the past several years and we also have the thought that you will take even more important parts in the years to come, in shaping our national economy.

That alone would be sufficient reason why we welcome the opportunity to come before this conference. Perhaps the best way to start is to read the definition of the Food Broker as he is described in the Constitution of the National Food Brokers' Association. I quote:

"A food broker is defined as an independent sales agent who performs the services of negotiating the sale of food and/or grocery products for and on account of the seller as principal, and who is not employed or established by, nor an affiliate or subsidiary of, any trade buyer, and whose compensation is a commission or brokerage paid by the seller."

Please note carefully that the Food Broker renders a service in negotiating sales, he acts as a salesman, he cannot be a buyer and in no event may he be under the control of the buyer. He is the representative of the seller, yet is not under control of the seller. In fact, he is an

independent agent in every sense of the word.

Food Broker Is Not A Buyer

This is a subject of vital importance for there has been much misunderstanding, due largely to the fact that the word "Broker" is used quite generally. Brokers in other lines such as, stocks and bonds, real estate, merchants and speculators do buy and sell for their own account. Also, they at times may collect commissions from both buyer and seller on the same transaction.

The legitimate food broker may do neither of these things. He is the agent of the seller and as such he may not accept a commission from the buyer. The moment he buys for his own account he becomes a jobber and is in direct competition with his principal as well as his customer.

This is the position of the National Food Brokers' Association and the following resolution has been publicised many times.

"That under the Constitution and By-laws, a member who buys and sells for a profit as a merchant, or as a jobber, or as a speculator, is a trade buyer and is not qualified for membership in the National Food Brokers' Association."

This position of ours, re the "Buying Broker" is of course known to the food trade, but we want you gentlemen of the Colleges and Universities and all others to know it also.

The Food Business

Is in three (3) general classifications, or divisions, i.e., Producers, Production and Distribution.

Producers

The producers embrace the entire agricultural industry, many of the fisheries and some of the natural resources industries.

Production

Production covers some 50,000 manufacturers, processors, canners, packers, etc. who convert the raw material into finished form ready for use or consumption.

Distribution

There are more than 5,000 Wholesale Grocers, some 900 Corporate Chains operating about 42,000 retail outlets and approximately 400,000 independently owned retail stores all handling food. These figures are given so that you may readily see that the food business is a big business, second only to agriculture itself in dollar volume.

The Food Broker

Just where does the food broker fit into the picture? Well, the easiest way to show you is by illustration: A few moments ago I stated that there were some 50,000 manufacturers, processors, canners, packers, etc. Comparatively few of them are large concerns with unlimited capital and who can afford to maintain a salaried sales force. The vast majority are small concerns who cannot afford this expense. That is where we come into the picture.

There are about 2000 food brokers in the United States. You will find them in every trade area of this country and Canada. Of these almost 1200 are members of the National Food Brokers' Association. The members of our Association sell probably 90% of all food sold through brokers. This fact should indicate that we do play a very important part in food distribution.

Typical Case

It would be utterly impossible for the small canner to operate without food brokers, efficiently, economically or even at all. To be specific, let's take a small 2-line canner packing Peas, say, 100,000 cases, a purely seasonal pack.

Assume that this small canner located in the State of Oregon, his entire production crowded into a few short weeks, when the Peas are just right for canning. On that limited production must be spread the overhead for the entire year. That overhead cannot contain much selling expense, yet the entire production must be sold -- also this small canner is in direct competition with every other pea packer of the United States. The pack of canned peas exceeded thirty-four and three-quarter million cases in 1943, and in 1944 some thirty million cases. That is his competition.

It could require 100 customers, each buying 1000 cases, yet those 100 customers may be in 15 or 20 different markets, many of them hundreds of miles apart. It would be utterly impossible for this small canner to have his own salesman call on these 100 customers in the 15 or 20 different markets, for in the first place he could not afford a sales force on a yearly basis nor could he pay the attendant traveling expenses on a purely seasonal pack.

Knowing this, this small canner appoints a broker in each market in which he hopes to sell. Now he has a complete, effective and functioning sales force with a known selling expense in advance of his actual pack -- for the broker is paid only for actual sales which have been consummated and as a general rule he does not receive his brokerage until the canner has been paid.

The small packer whom I have used as an illustration is not alone in his use of food broker. The very largest units in the industry including such firms as Calpack, Van Camp, Hawaiian Pineapple Company, as well as General Foods, also use food brokers in many markets throughout the nation, where it has been found from actual experience that the use of the food

broker is more economical than setting up their own sales organizations on a salaried basis. Generally speaking, these larger organizations use their sales force only in the major markets such as, New York, Chicago, Los Angeles, etc., where sufficient volume can be had to justify their own salesmen.

Sugar Refiners

Take a brief look at the Sugar Refiners. Here we have one of the largest investments per unit in the food business.

The Sugar Refiners have ample capital to conduct their own sales department if they so desired, yet every pound of refined sugar used in the United States either for home use or manufacturing purpose, is sold by the Broker. Why? Because the Sugar Refiner has found that it is more economical to use the broker. That is the only reason.

Packaged Goods

Manufacturers of packaged goods are generally sold under brand names and are commonly called Specialties. As such, they require missionary work by the brokers or manufacturers' retail salesmen calling on retail outlets. Since there is considerably more detail and selling expense there is naturally a higher rate of brokerage than prevails on competitive lines and commodities.

On Specialties the broker not only supervises retail salesmen, but renders reports to the principals, gives complete information on competitive brands, handles and invoices deliveries made from consignments, checks advertising; in fact performs all of the functions which the principal would do himself. Regardless of whether the food broker is handling Commodities such as beans and rice, competitive canned goods or specialties he more than earns his very moderate fee.

Only the fact that the food broker represents a number of lines, some of which he is selling every day, enables him to function economically, for when he is turned down on peas he still has the opportunity of selling that same buyer a car of corn or fruit or something else in which there is active trading. At least he seldom suffers from lack of opportunity.

The food broker operating generally in a limited trade area is in an unequalled position to speak with knowledge of local conditions. He has the tremendous advantage of knowing his distributors rather intimately for many of them are his personal friends. He plays golf with them, eats with them and in many instances they visit back and forth with one another in their respective homes. Due to this close association, built through years of mutual confidence and fair dealing, is it any wonder that the food broker is in a better position to supply his principal with the necessary information regarding local markets than could any other factor in the food industry?

If the principal is operating nationally or regionally he may have over-night first-hand and accurate information on any given commodity. The market may be glutted in Los Angeles, yet the reverse may be true in Portland.

Economy of Operation

Many of you gentlemen who are present, deal in facts and figures. I would like to present some food for thought so that if you are called by Government to serve in some advisory capacity in the many alphabetical agencies which have played such an important role during the past 12 years, the following may prove of interest as it pertains to the cost of sales i.e. selling expense.

In 1939 there were 200,573 wholesale establishments of all kinds in the United States whose total volume exceeded 55 - 1/4 billions of dollars.

Manufacturers' sales branches with warehouse stocks in the grocery field accounted for a sales volume of 2 - 1/3 billion and the operating expense including the payrolls, i.e., cost of sales was 11.1%.

Manufacturers' sales offices without warehouse stocks accounted for total sales of \$346,375,000.00 and here the cost of sales was 17 1/2%.

In this same year, sales by food brokers exceeded 2 1/4 billions of dollars and the cost of those sales was less than 2%.

These are not our figures, but were compiled by Government in its last Census of Business. They are accurate and covered the year of 1939. They may be obtained by writing directly to Washington if you are interested in detail. Since 1939 business has tremendously expanded and it is reasonable to assume that as volume increases the cost of sales declines. These figures published by Government should refute any idea that the food broker is an unnecessary middle-man, adding unnecessarily to the cost of living.

To the contrary, the food broker is a very necessary link in food distribution and if the food industry were deprived of his services it would add many millions of dollars to the nation's food-bill.

At this moment I want to read you a letter, the original of which is in our files, for it explains in a nut-shell what I have been attempting. It is from a Growers' Co-op, selling one product.

"This Association, which was organized in 1912 and is currently doing an annual business of around \$15,000,000.00 sells its products to some 5900 wholesale and chain store food distributors, as well as food manufacturers in 1,598 markets in the United States.

"These 1,598 markets are divided into 121 territories in each of which the necessary sales solicitation, distribution arrangements and other contacts between our customers and ourselves are handled for us by a food brokerage firm.

"In employing food brokers, a practice which we have followed since our organization, we are convinced that we are selling more of our products at a lesser cost and maintaining a more satisfactory relationship with our trade than if we were to carry on this work with our own direct employees.

"The sales and other contact work attendant to the annual distribution of our output reaches extreme peaks and valleys. In many territories it is necessary to have large organizations to carry out these activities during the peak periods, whereas comparatively small effort is needed during the dull periods!

"The food broker whose remuneration is based upon the sales he makes is prepared to furnish this organization because he also represents other sellers whose periods of activity dovetail with the dull periods of others of his sellers, thus enabling him to maintain permanently an adequate organization.

"Also, in a nation-wide business such as ours where many thousands of customers must be contacted at least several times annually, the expense of travel is a very large item. The broker representing a dozen or a score of sellers can contact a buyer for all of them with one trip, whereas if each of them used direct employees, the total cost of that call would multiply many times.

"The successful and well-known food brokerage concerns, such as we use, are almost invariably managed by men of outstanding ability and long experience - qualities which insure adequate earnings for themselves and satisfactory service for their sellers.

"Certainly, in our opinion, neither we nor any other sellers using food brokers could secure the services of such men as direct employees.

"If food brokers or some closely comparable service to that they give were not available, we would be deprived of personal contact with a large number of our customers in a substantial number of markets in the country because our business with such customers in such markets, while quite substantial in the aggregate, is not sufficient to justify the expense of personal calls.

"You may recall that several years ago we opened a salaried sales office in one of our largest and best markets. After maintaining this for several years our sales not only decreased, but our operating cost was over twice the regular brokerage rate, due largely to the facts that our product is seasonal and that sales costs could not be spread over a large number of products as the food broker spreads them. Consequently after a fair trial, the office was abandoned, with the result that since we have gone back to the broker the sales have consistently increased.

"We are quite confident that if food brokers were ruled out of the picture, sales costs of all but a handful of the country's very largest food packers would skyrocket, with the result that consumers in the end would have to pay this added sales cost in the form of increased retail prices."

The letter which I have just read, was from a Growers' Co-op and is typical of the field. In the beginning, virtually all of these Co-ops

started out with the brokers. As their business expanded some of them dropped the broker for their own salaried sales organizations. After a fair trial by the new method, one by one with but one exception they have returned to the food broker. Today the Growers' Co-op is our most loyal friend.

Today the entire world faces a crisis probably far more serious than most of us realize. The lack of food in many areas of the world cannot help but be felt here in our native land. Some foods will continue to be scarce for a variety of reasons and yet other foods will be available in somewhat larger quantities.

There are the undercurrents and influences of legislation, subsidies, imports and exports which must be watched. But above all, there will be need for accurate knowledge of our regional markets, especially on the part of smaller processors who need to exploit advantages quickly. The right background, the facts and information, the correct knowledge of what is going on in individual markets and what the processor must do to get his share of the business must come to him through the Food Broker pieced together by markets.

Markets established yesterday aren't going to be stable markets for the products of food processors if some of our products are not available. Take, for example, Canned Shrimp. Frozen shrimp is moving into some markets today and has been doing so for many months, at an impressive rate; in fact, it is selling fast while canned shrimp languishes. To many individuals it looks as though canned shrimp had passed the demand peak in certain metropolitan areas. Some foods will take the place once held by popular but scarce canned foods. What is true of shrimp is true in many other numerous directions.

We need to speak briefly of the retail store and what is going on there, for there have been many changes, some of them so gradual that we don't realize their significance until they come about.

In comparing food consumption for the years 1909 to 1916 with a ten-year average beginning in 1931, we find that dairy products increased 39 pounds per person--

Vegetables increased	33 lbs. per person
Fruits	" 22 " " "
Sugar and syrup	" 20 " " "

whereas

Meat, fish and poultry actually decreased 9 pounds on a national consumption basis and potatoes dropped about 35 pounds.

It is reported that fresh fruits and vegetables skyrocketed from 385 pounds in 1920 to about 500 pounds in 1944. It is also significant that there used to be thousands of individual meat markets, thousands of individual produce stores which were finally amalgamated with grocery stores handling dry groceries. The reason back of it is because the selling of dry groceries is a natural and because self-service works best with dry groceries.

There is no question but that the cost of distribution must come down after the war. Influences are already at work to bring this about and it has been said that dry groceries will probably have a mark-up as low as 10% at retail. This means that if grocers are to make money at 10% they will have to work for faster turn-over, which is another way of saying that dry groceries will have to be merchandised almost entirely on a self-service basis with every effort being made by the retailer to give preference to those items having ready acceptance with customers.

This is only natural, for there is virtually no loss in dry groceries when compared to the shrinkage suffered on fresh fruits and vegetables and again as dry groceries will always constitute from 45 to 60 percent of the store volume.

As an illustration of how rapidly self-service is growing, at the close of 1944, 18% of the independent grocery combination stores had grocery departments arranged for complete self-service, whereas two years previously it was only 11%.

A modified form of self-service generally designated as semi-self-service accounts for an even greater proportion of the independent store sales as some 54% operated their grocery departments on this plan and sales in these stores accounted for 48% of independent store volume. In other words, the two types of service take in 70% of all sales made through independent stores.

Due to the necessity of quick turn-over, lack of manpower and several other factors, more and more independent stores are going over to self-service.

We think that we can also tell you something of the plans of the larger chains, such as A & P Tea, Kroger, National Tea, Safeway, etc. The Chains are planning two types of stores, i.e., the larger types of from 10,000 to 15,000 square feet to do an annual business of around \$200,000.00. The other they call the Superette Semi-Self-Service neighborhood store, which is likely to appear in greater numbers rather than less. Both independents and chains will be interested in brands which sell themselves.

This does not mean that there is not a place in every community for a really high type grocery, giving both delivery and extending credit. There always will be, primarily for the reason that there is sufficient patronage to justify that kind of service where the customer is willing to pay for these extra privileges.

Every store needs character as it does merchandising. It needs to be competitive always on fast moving items and it should be consistent about its competitive condition and not just competitive over the weekend. It needs to aim for the largest volume of business with the minimum of work and it needs to keep from being fooled by percentages because a store deals in dollars and cents.

There is hardly a food manufacturer in the country of any size who is

not intending to bring out some kind of new food. Most of these will be designed to save kitchen drudgery and to simplify housework. Frozen foods may also be expected to expand their volume, but it seems to be the general impression that frozen foods will be more a competitor of fresh fruits and vegetables than of canned goods.

Dehydrated foods generally speaking, have not gone over with the consumer, consequently we do not look for an increase in volume in that direction other than in a very few products, primarily Soup mixes, very few vegetables and some fruit concentrates.

Taken as a whole, the future of the food business seems to be quite bright, for more than ten million service men and women with healthy appetites who have been eating at Government expense are not being returned. Their food will be bought very largely thru retail stores. Also about twelve million children have been born during the war and their food requirements will mount each year. Dislocations caused by tremendous number of war workers eating out is the reason that restaurant sales have sky-rocketed. Many of these people will again return to a normal living, eat at home and buy their food thru a regular grocery store, families will be brought together, millions of new homes will be established and supplies will be bought very largely in food stores. To me at least I have no fears for the future of the food business which is an integral part of agriculture.

If I have been able to contribute any part in making the "Marketing Conference" a success and to clarify the part that the "Food Broker" plays in food distribution, then I am satisfied.

In conclusion. may I again express my thanks in behalf of all members of the National Food Brokers' Association, to President Strand, Dean Schoenfeld and Dr. Moore for having given us the opportunity to take part in your conference. Again I thank you.

PRICE STRUCTURES

Dr. D. B. DeLoach
Professor of Agricultural Economics,
Division of Agricultural Economics,
Oregon State College

This is an acquisitive society. American farmers want to export food and fiber but they raise their voices in solemn protest against proposed imports. Labor wants freedom of choice but it denies freedom of choice to others. Management wants a free market but it has been active in supporting economic legislation to prevent new competitors from entering that free market. The dairyman wants to sell his butter but he does not want the cottonseed man to sell his oil in the form of margarine. The cotton producer tries valiantly to protect his market from competition from other fibers. The dairyman's and cotton producer's powers have been sufficiently great to secure restrictive laws to protect them against competition. Under prevailing standards these inconsistencies are neither immoral nor unmoral. They are

accepted procedures among economic groups seeking to maximize gains and minimize losses. It is part of our basic struggle for economic security in a world of potential plenty but actual scarcity. It is part of the effort to protect through the force of law, market rights that could not be maintained under a condition of free enterprise. As Oregon farmers and businessmen, I ask you how badly you want free competition? I ask you how badly you want individual liberty? Since we accept these individual and group actions designed to obtain economic benefits as normal procedures, we must consider carefully the immediate and long-run implications of such forces in discussing any economic subject.

This is a conference on distribution as well as marketing. Used in this sense the term "distribution" means that we are interested largely in "who gets what and how." In a money economy this question resolves into one of prices -- prices of goods and services bought and sold in the market place. While I have been assigned the subject of price structures, you may rest assured that I do not propose to tell you what prices you will receive for your products or for your labor. I do not know, and no one else does. What I intend to do is to discuss for you some forces that determine prices. Before proceeding with this subject, I have certain admissions to make with respect to my own limitations and those of the field of price theory. I think it is only fair to an audience of this caliber to admit to these limitations, if for no other reason than the fact that most of you are well aware of many of them. Here they are:

1. Those of us interested in economic problems have not developed the tools that are adequate accurately to predict or to measure change.
2. The subject matter with which we deal lacks a degree of definiteness that makes it possible to isolate cause and effect.
3. The problems with which we work arise by virtue of the struggle of man for economic security in a society in the process of constant change. Due to the changeability of human beings and the lack of ability of economists to isolate economic phenomena for experimental purposes, many conclusions relative to economic material are extremely tenuous, even when arrived at by trained economists. Conclusions of pseudo-economists may be especially dangerous.

The inexactness of any discussion in economics, political science, or sociology is a source of amazement to a pure scientist. But it should not be. Every scientist is familiar with the degrees of exactness and the definiteness of conclusions in the field of applied science, and when we leave the more mature disciplines of mathematics, physics, and to a lesser extent, chemistry, one soon finds that human judgment becomes an extremely important determinant in arriving at a sound conclusion.

In any conference similar to this there is always a demand made on the speaker for a prediction or a series of predictions relating to this or that problem or the probable results of this or that course of action. This desire of man is as old as the human race. True it comes to people in varying degrees, and the desire of man to foretell the future can be satisfied in varying degrees only, but never completely.

True it comes to people in varying degrees, and the desire of man to foretell the future can be satisfied in varying degrees only, but never completely.

Most of our social and economic disturbances have their bases in the struggle of man for a greater share of the world's goods and services. This condition of relative scarcity of goods and services makes possible the existence of the structure of prices as we now know it. In the normal course of things most individuals are not able to do too much when striving to improve their economic well-being if acting alone. Their bargaining power is insufficient to be effective from the standpoint of demand or supply. For this reason they have chosen to combine into groups in which the persons composing the group have a common goal and can strive collectively to attain that goal. This combined action may be to the advantage of themselves and the possible advantage of other people or other economic groups, but most likely it will accrue to the possible disadvantage of those outside the group.

The speakers who have preceded me have discussed subjects having a direct bearing on price structures. The speakers who follow me will deal with instruments of control that have a direct bearing on prices through the media of price controls, supply controls, and demand controls. In a sense, then, my subject constitutes the "hub" of an economic wheel because the several forces discussed by the other speakers in this Conference come to focus in the price structure.

It is often necessary that one understand the conditions precedent to a statement to understand the meaning of the statement. Even the sound of words might cause confusion. I can illustrate this by the story of the poverty-stricken young couple who were soon to be blessed by their first child. A beneficent relative who shared his household with the couple generously bestowed upon the husband a check for \$100. The young man was accustomed to praying before retiring and the benefactor knowing that this ritual was followed night after night decided that he would find out whether the gift of money or bundle from heaven was most appreciated. So he eavesdropped. He heard the following: "Oh, Lord, I thank thee for the little (sucker, succor.)" While there should be no misunderstanding with respect to such terms as "demand" or "supply," there is, and it is not a condition resulting from similarity of sound. It is the lack of understanding of the meaning of economic terminology which is so often the result of giving a technical meaning to a common word.

The subject of market demand and market supply constitutes a stumbling block to every college sophomore. Laymen are never inhibited by the use of the terms because each one interprets them in his own way. A certain group of persons that is never inhibited by anything except the forthcoming election interprets the terms as conditions seem to warrant. Yet demand and supply as applied to price mean much; they imply more.

Desire and the purchasing power to make desire effective constitute demand. There is an element of time, of place, and of condition, each of which constitutes a condition precedent. Supply presupposes the

existence of goods and services and it implies the ability and willingness to offer the goods or services for sale at given prices. To save time I am going to discuss the "elements of condition" only, because they are so important in the field of price determination.

Price is a function of the supply and demand of goods on the one hand, and the supply and demand of money on the other. I shall deal primarily with the supply and demand for goods. Professor Potter will discuss the monetary forces influencing price. Now let us turn to a consideration of the demand forces influencing price.

1. The characteristics of our population. This involves the age distribution of our people, their cultural heritage, etc., and the source of employment. Each of these factors is in the process of change. This change is to a large extent the result of the progress made in the field of science through the years. Forty years was the life expectancy in this country in 1945; in 1900 it was fifty years; today it is sixty-five. These changes in life expectancy are due mainly to advances in the field of medicine and surgery. Frankly, all of this means an increase in proportion of older people in population. As one observer on the subject of population trends has stated, "In 1900 we had in this country only 2,000,000 people sixty-five years of age. At the present time we have 7,500,000, and by 1960 we shall have 20,000,000 people sixty-five years of age or older. Think of what that means to the Republican Party! Think of what that means to Social Security. And to business: a market of 20,000,000 people that did not exist a few years ago."* We should not forget, too, that there has been approximately a 15 percent increase in our population on the West Coast since 1940.

2. Promotional activities, in the sense that consumer attention is shifted from one product to another product. We need think only of a few of our Oregon products as examples. Prunes to oranges; apples to oranges; linen to synthetic fabrics, and so on down the list. What is ahead in plastics that may cause the hair on the heads of the Oregon wool growers to turn white? What is ahead in chemistry that will enable producers of natural fibers to treat them in a manner that will lend characteristics that they do not possess in their natural form? What is ahead in the margarine industry with respect to flavor, texture, and color?

3. "New things for better living" so the slogan goes. Unlike my preceding point, this condition presupposes the possibility of expanding consumer wants by making available more goods and more services within the reach of larger and larger numbers of people. To my mind this is the way to progress. Whether it can be achieved remains to be seen, but it is the problem we face now and not in the future. If I understand the implications of this program correctly, it would mean a readjustment of productive energies of land, labor, capital, and management to make possible the production of new products and new services to satisfy new wants among consumers. We have mastered our production techniques to a point where

* Wendt, Gerald. Address: Wartime Science and American Business

we can satisfy the basic needs for food, clothing, and shelter. We are in a position now to expand our productive potential to a point where the conveniences of life are made available to the masses of our population. And we must realize that we are now faced with the alternative of a higher standard of living or a system of enforced idleness which will create new problems of serious proportion.

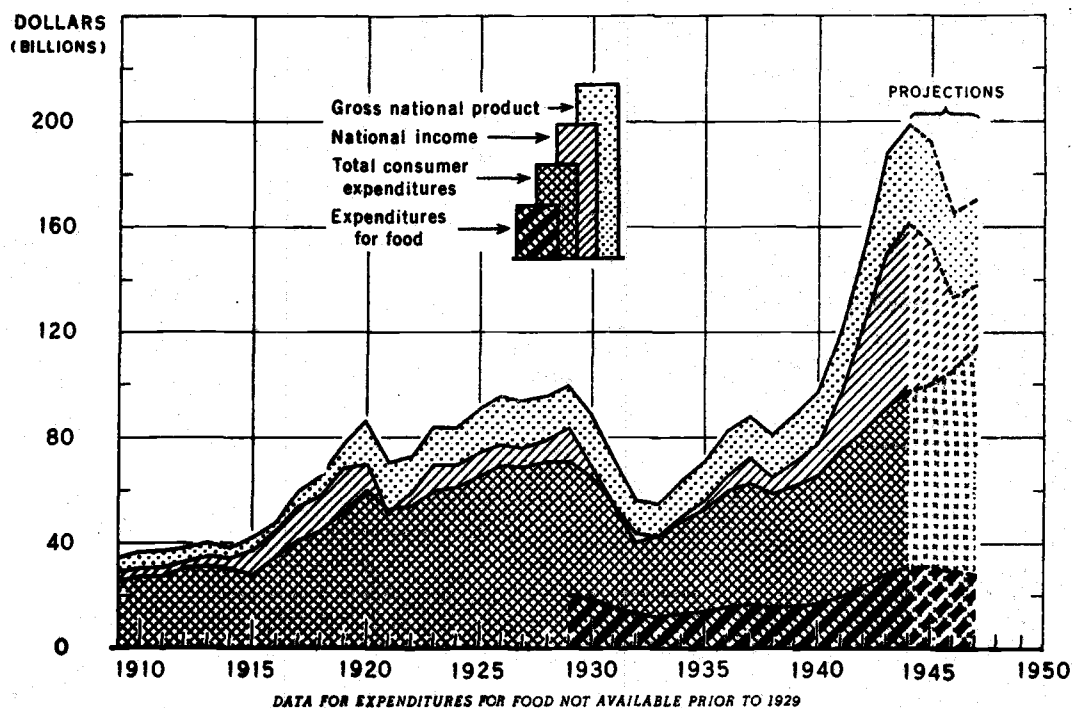
4. Purchasing power. This idea has been stressed consistently by leaders in the Committee for Economic Development. In recent studies it has been fairly well established that consumer purchases in retail stores are closely related to the volume of national income payments after taxes are deducted. The upward and downward movements of the indices of national income in the United States and the net farm income are strikingly similar, and the relationship of consumer expenditures for food, total consumer expenditures, and national income is illustrated by the following Chart A and Table 1. Shows funds available for purchases after 1945. Not income only. Chart B and Table 2 illustrate another point very clearly; namely, that the cash receipts from farm marketings are closely tied to the income of industrial workers. It is evident, however, that the chart shows somewhat more of a direct relationship than actually exists because it does not consider all incomes. Chart C depicts the trend of employment through the period 1900-1944. Do not forget this. To you businessmen and farmers, let me emphasize the fact that your market is largely the result of the demand of all wage earners. The war has profoundly changed the distribution of consumer incomes. By so doing it realigned the whole structure of consumer demand and price considerations.

The influence of the supply of money and credit on the price structure is extremely important. This is especially true since our old concepts as to the rate of change seem to be outdated. Since this phase of the problem is to be discussed by Professor Potter, I shall merely make one observation. An increase in the supply of money alone will not necessarily cause an upward movement in the price structure, but it may release pressures that cause price changes. The volume of circulation of money and credit instruments, as well as the existence of a volume of open credit transactions, may be of far greater importance. In addition, the volume of goods and services produced may increase sufficiently to offset additional money and credit, and money and credit turnover. In brief, the purchasing power of money is dependent on several forces, and the availability of goods looms among the more important.

5. Control. The efforts of the government to control demand has been well illustrated during the war period. This was a new experience to us. Because certain democratic principles could not be discarded, even in wartime, many of the controls constituted a series of political compromises, thereby creating rather trying conditions among some groups by leaving the producers of some basic commodities unable to compete with producers of luxury items that were left uncontrolled or for which no adequate controls were instituted. Regulation of demand by the government was instituted to aid in price controls and to effect the maximum movement of labor and capital from peacetime to wartime industries. While the program was not entirely effective, the striking fact is that we had the maximum of guns

CHART A — TABLE 1

EXPENDITURES FOR FOOD, TOTAL CONSUMER EXPENDITURES,
NATIONAL INCOME, AND GROSS NATIONAL PRODUCT, UNITED STATES,
1909-44 AND PROJECTIONS FOR 1945-47



U. S. DEPARTMENT OF AGRICULTURE

NEG. 45583 BUREAU OF AGRICULTURAL ECONOMICS

National income reached a peak in 1944 about 176 percent above its 1935-39 average. Meanwhile consumer expenditures increased only about 65 percent. The difference was made up by large increases in personal taxes and individuals' savings. National income probably will decline in the year or two, but consumer expenditures may increase slightly. Personal taxes will decline somewhat but will remain well above their prewar level. As a result, individuals' savings are likely to decline markedly from their high wartime level.

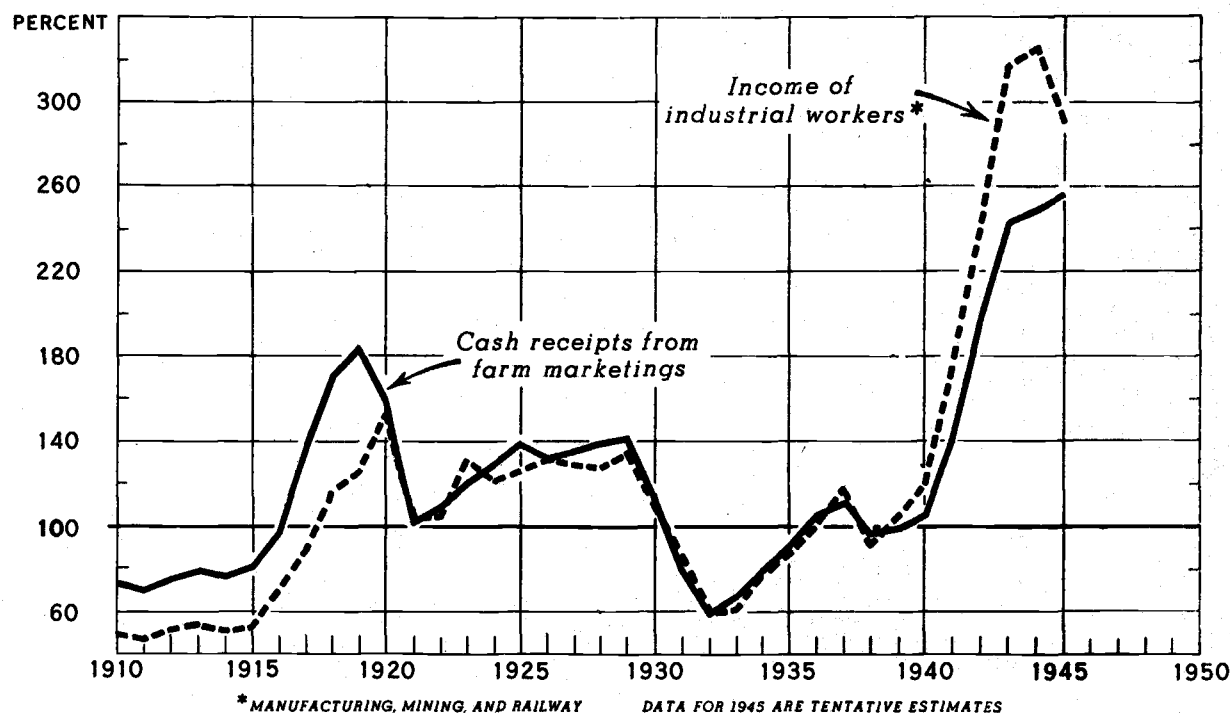
Expenditures for food, total consumer expenditures, national income, and
gross national product, United States, 1909 - 44

Year	Expenditures for food	Total consumer expenditures	National income	Gross national product	Year	Expenditures for food	Total consumer expenditures	National income	Gross national product
	Billion dollars	Billion dollars	Billion dollars	Billion dollars		Billion dollars	Billion dollars	Billion dollars	Billion dollars
1909		25.5	26.7	34.0	1927		68.4	75.9	93.5
1910		27.0	30.4	36.7	1928		70.1	78.7	95.6
1911		27.0	30.5	36.8	1929	19.9	70.8	83.3	99.4
1912		30.0	32.9	38.5	1930	18.5	64.9	68.9	88.2
1913		31.0	34.8	40.0	1931	15.4	54.2	54.5	72.1
1914		29.8	33.9	38.5	1932	12.1	43.0	40.0	55.4
1915		28.5	37.0	42.1	1933	11.4	42.4	42.3	54.8
1916		34.8	44.8	47.8	1934	12.6	47.7	49.5	63.8
1917		40.4	53.7	59.5	1935	13.9	52.2	55.7	70.8
1918		44.4	58.3	65.5	1936	15.2	59.1	64.9	81.7
1919		51.3	68.2	77.1	1937	16.2	62.5	71.5	87.7
1920		59.7	69.5	86.2	1938	15.1	58.5	64.2	80.6
1921		52.7	51.7	70.3	1939	15.4	61.7	70.8	88.6
1922		53.6	59.5	72.5	1940	16.4	65.7	77.6	97.1
1923		60.0	69.5	84.3	1941	19.0	74.6	96.9	120.5
1924		60.9	69.1	83.4	1942	23.9	81.9	122.2	151.5
1925		65.2	73.7	90.0	1943	27.9	90.9	149.4	187.8
1926		68.7	76.6	95.3	1944	30.4	97.6	160.7	198.7

CHART B — TABLE 2

CASH RECEIPTS FROM FARM MARKETINGS, AND INCOME OF INDUSTRIAL WORKERS, UNITED STATES, 1910-45

INDEX NUMBERS (1935-39=100)



U. S. DEPARTMENT OF AGRICULTURE

NEG. 42554 BUREAU OF AGRICULTURAL ECONOMICS

Changes in the purchasing power of industrial workers greatly influence the demand for, and consequently the prices of, farm products. Changes in the prices of farm products ordinarily account for most of the changes in receipts from farm marketings. Fluctuations in the income of industrial workers and cash receipts from farm marketings have been similar most of the time since 1910. The series occasionally move in opposite directions, however, as in 1920, 1924, and 1945.

Cash receipts from farm marketings and income of industrial workers, United States, 1910-45
Index numbers (1935-39 = 100)

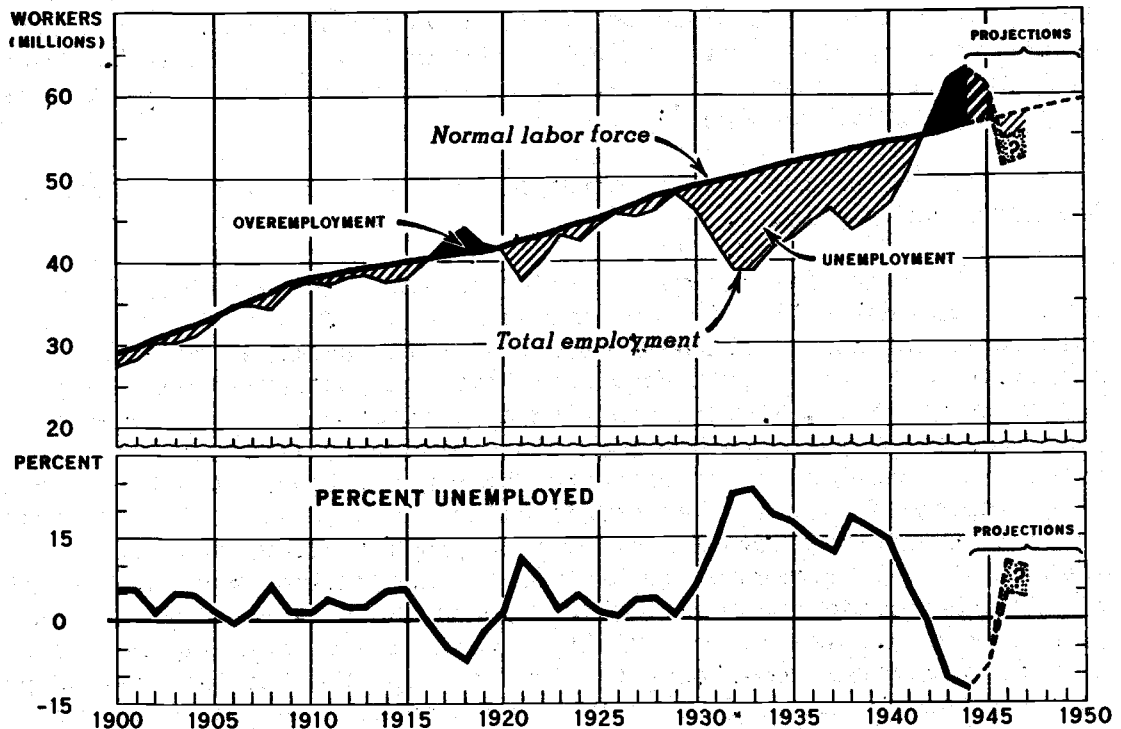
Year	Cash receipts from farm marketings	Income of industrial workers 1/	Year	Cash receipts from farm marketings	Income of industrial workers 1/
1910	73	48	1928	139	126
1911	70	47	1929	142	134
1912	75	50	1930	113	110
1913	78	53	1931	80	84
1914	76	50	1932	59	58
1915	80	53	1933	67	61
1916	97	69	1934	79	76
1917	135	86	1935	89	86
1918	169	115	1936	105	100
1919	183	124	1937	111	117
1920	158	151	1938	96	91
1921	102	102	1939	99	105
1922	108	105	1940	105	119
1923	120	130	1941	140	169
1924	128	121	1942	192	241
1925	138	126	1943	243	318
1926	132	131	1944	248	325
1927	135	127	1945 2/	255	290

1/ Based largely on Bureau of Labor Statistics and Interstate Commerce Commission data. Includes wages of factory, mining, and Class I railway employees.

2/ Tentative estimates.

CHART C -- TABLE 3

NORMAL LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT IN THE UNITED STATES, 1900-1944, AND PROJECTIONS FROM 1945 TO 1950



U. S. DEPARTMENT OF AGRICULTURE

NEG. 43805 BUREAU OF AGRICULTURAL ECONOMICS

Except for brief periods during the depression phase of the business cycle, unemployment was not a serious problem in the United States. Then came the overemployment of the war period of the 1940's which is likely to be followed by some unemployment comparable to that following World War I. A considerable part of the expected decline in employment in the next year or more however will consist of voluntary retirements rather than involuntary unemployment.

Normal labor force, employment and unemployment in the United States, 1900 - 44

Year	Normal labor force	Number employed	Percentage of unemployed	Year	Normal labor force	Number employed	Percentage of unemployed
	Thousands	Thousands	Percent		Thousands	Thousands	Percent
1900	29,025	27,378	5.7	1926	45,962	45,498	1.0
1901	29,959	28,238	5.7	1927	46,939	45,319	3.5
1902	30,905	30,405	1.6	1928	47,914	46,057	3.9
1903	31,842	30,319	4.8	1929	48,354	47,925	.9
1904	32,605	31,175	4.4	1930	49,006	45,997	6.1
1905	33,653	33,032	1.8	1931	49,597	42,530	14.2
1906	34,647	34,790	.4	1932	50,132	38,727	22.7
1907	35,631	34,875	2.1	1933	50,691	38,827	23.4
1908	36,580	34,284	6.3	1934	51,267	41,474	19.1
1909	37,454	36,735	1.9	1935	51,769	42,653	17.6
1910	38,133	37,580	1.5	1936	52,237	44,830	14.2
1911	38,668	37,097	4.1	1937	52,692	46,279	12.2
1912	39,089	38,169	2.4	1938	53,229	43,416	18.4
1913	39,500	38,482	2.6	1939	53,788	44,993	16.4
1914	39,789	37,575	5.6	1940	54,322	46,683	14.1
1915	40,083	37,728	5.9	1941	54,676	51,434	6.1
1916	40,314	40,127	.5	1942	55,143	55,762	-1.0
1917	40,752	42,685	-4.7	1943	55,798	62,016	-11.1
1918	41,088	44,187	-7.5	1944	56,026	63,160	-12.5
1919	41,159	42,029	-2.1				
1920	41,897	41,339	1.3				
1921	42,445	37,691	11.2				
1922	42,966	40,049	6.8				
1923	43,760	43,011	1.7				
1924	44,549	42,515	4.6				
1925	45,009	44,192	1.8				

with the minimum loss of the necessities of life that we have ever had in our history. I must make my point and proceed with the discussion. It is this. Money becomes a secondary factor in determining demand under a condition in which the products are allocated equally. This presupposes compliance with the legal requirements of sale and purchase. In many instances this was not the case. Let me repeat my opening statement: this is an acquisitive society!

Now let us look at the other side of the price-making ledger, i.e., the forces of supply.

1. Production cost in relation to the price structure is the basic force operating in the field of market supply. In industries of increasing unit cost, the normal long-run tendency is for supplies to decrease as market prices decrease, thereby reflecting the extent to which supply is a resultant of price. On the other hand, many of our mass production industries are operating under conditions of decreasing unit cost, and in such cases a decrease in market prices might conceivably become the reason for an expansion of output, thereby effecting the economies of mass production. In dealing with this problem of cost of production, we should recognize that the task of marketing is part of the production process, because it is through marketing activities that goods and services are given time, place, form, and possession utility. Generally speaking there has been a tendency for marketing cost to rise in proportion to the cost of producing the goods we consume. That seems to be a natural outgrowth of our urbanized civilization in which the two-room apartment and the delicatessen have become the most glaring examples of population concentration and its effect on marketing methods and consumer demand. In substance, hand-to-mouth buying has come into its own, and under such conditions marketing costs will likely become more and more of a factor in the price the consumer pays for food, clothing, and shelter. One caution is necessary with respect to this point. Absolute marketing costs may decrease, but the percentage of marketing costs of the total consumer price may increase. This fact must not be overlooked, because it will be the subject of controversy in the years ahead. By and large, competition has been sufficiently great in the distributive trades to force lower costs; in fact, competition has been so keen in many types of wholesale and retail marketing that lower costs result from the maintenance of low wages in order that lower prices can be passed on to the consumer. Perhaps this is one of the instances where competition is socially wasteful.

Market supplies may be influenced by government or industry policies. The latter appears to be illegal except for cooperative producer organizations. In either instance the avowed objective of supply or market controls is for the purpose of influencing price. Market and production controls are designed to effectuate a balance between supply and demand at a price level that is most satisfactory to the group responsible for initiating the controls. Without exception the laws authorizing the establishment of price, market, or supply controls are introduced with the proper preamble relating to the necessity of such type of legislation for the purpose of maintaining economic stability and improving the general welfare of the people. In the main, however, legislation of this type is designed to effectuate the

objectives of specific economic pressure groups, and when such legislation fails to accomplish this objective, it immediately falls into disfavor.

There are other supply forces operating in the market place but the foregoing are the more basic. Properly understood, the statement that supply and demand forces determine prices is true. In a free market these forces would operate with a minimum of friction caused by an unbalanced bargaining position of any factor of production. Since we do not have free competition among sellers or buyers and since we have never had a condition of free competition, prices depend on the respective bargaining positions of the buyer and seller. The bargaining positions may be influenced by numerous factors. In recent years it has pivoted on the ability of economic groups to organize and bargain collectively to attain their ends. Unfortunately that is the condition that is so dominant in our economy at this time, the only justification being that it is the accepted procedure and any economic group that fails to follow it is at a distinct disadvantage.

Ladies and gentlemen, I have spoken to you in absolute frankness. I have taken literally Dr. Strand's statement that "None of us understands the full impact of all of the forces affecting our lives. But as leaders it is our responsibility to seek to understand and evaluate these forces." The statement appears as the foreword in your program. Since I have a responsibility to seek to understand and evaluate forces and to help you seek to understand and evaluate forces, I am going to close this discussion with a few comments and questions.

1. It is through the pricing process that the distribution of wealth and income takes place. As I have indicated, I do not know what the price on any commodity is going to be in the future, but I do know that our concepts of exchange values in terms of money are undergoing radical adjustments. These changes are resulting from the supply and demand of goods on the one hand and the supply of money and credit resulting from governmental fiscal policies on the other. There is no indication that the governmental program of deficit financing and easy money is to be changed. We must face the fact that organized economic groups are systematically engaged in raiding the Federal Treasury. Present indications are that these regular raids on the Treasury will be increasingly greater. Is this what you want? If it is, it can be obtained only through a further surrender of individual liberties.

2. Wealth can be created through production only. A higher standard of living can be attained only through a fuller utilization of land, labor, capital, and management. To the extent that restrictive economic legislation is used to limit prices, production, or market rights for the purpose of maintaining the vested interests of the inefficient, we cannot progress toward a higher standard of living. Due to basic abuses of economic and political power our price structure has been associated with the convention, or idea, of scarcity. At the same time we have chosen to forget the fact that wealth must be produced by employing land, labor, capital, and management. What do you want? It is time to consider our course of action.

3. If we were at or near the subsistence level with respect to food, clothing, and shelter, pestilence and starvation would result from

our present struggle between groups for higher money incomes. Such internal strife is possible only where there is a sufficient store of life's necessities to tolerate the luxury of strikes, production controls, and market controls. Should we dissipate our wealth by refusing to produce now in order to get a price structure that immediately yields the greatest return for certain groups at the expense of others? What do you think? It is my thought that if "We Face the Future" squarely, we must admit that our present economic policy, if continued too long, will impair or might result in a breakdown of our productivity. In a sense, therefore, we are eating our seed corn.

INDUSTRY'S EFFORTS TOWARD SELF-REGULATION AND CONTROL

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In 1776 when Adam Smith published his book "The Wealth of Nations" in which he developed the theory of laissez faire, he set forth an economic philosophy which was made to order for Americans. It appeared at a time when the Colonies were fighting to get free from the thralldom in which they found themselves as a result of England's ruin or ruined policies, policies which grew out of the economic theory of mercantilism or statism in which a state runs business for the Nation or Empire. No matter what Sam Adams and other politicians might have to say about "no taxation without representation," the businessmen in the Colonies wanted first and foremost to be quit of English interference and to run their own affairs in their own way. If laissez faire meant that -- they were for it. When they found such to be the case they accepted the philosophy hook, line and sinker.

And when Thomas Jefferson postulated that the best government is a government that governs the least, his words were sweet music to their ears. What those early Americans feared and what businessmen since then have struggled against is too much government mixed with their affairs. It was their belief and conviction based on Adam Smith's thesis, that competition and not governmental controls should be depended upon to bring fair prices, and low rates and produce good service. Regulatory legislation even for industries affected with the public interest did not have a chance of favorable public interest or support until at least a century after the first enunciation of laissez faire.

During the first half of last century our economy was agrarian and centered for the most part in the southern states with political leadership largely drawn from those states. Such industry as existed was small scale and because of water power and easier access to coal fields it was largely located north of the Mason and Dixon line. With the outbreak of the war between the North and the South, great industrial changes came to pass from the impact of the tremendous demands of the Union Armies for all kinds of military supplies plus the enormous profits made by the industrialists who furnished those supplies. Industry, from then on, started its transformation into larger and larger units and the economic picture of the

country underwent a fundamental change. Parrington, in his book "Main Currents in American Thought" graphically described that transformation in these graphic words:

"This bustling America accounted itself a democratic world. A free people, as a result of war, had put away autocratic privilege (as it had developed in the South) and conscious of its power went forth to possess 'the last frontier'. Its social philosophy was summed up in three words — pre-emption, exploitation and progress. Its immediate and pressing business was to dispossess the government of its rich holdings; — lands and possessions of the government were so much idle waste, untaxed and profitless; in private hands (and free of government control) they would be developed — pre-emption meant exploitation, and exploitation meant progress. It was a simple philosophy and it suited the simple individualism of the times. The 'Gilded Age' (so-called) knew nothing of enlightenment. It recognized only the acquisitive instinct (and, I might add, in its most rugged and ruddy aspects) — The Great Barbecue, (as Parrington described it) was on. It was a huge feast to which all presumably were invited. Not quite all, to be sure: inconspicuous persons, those who were at home on the farm or at work in the mills or offices were overlooked, a good many indeed out of the total number of the American people. But all important persons, such as leading bankers, promoters and businessmen received invitations — it was a splendid feast — the largest portions were served to the favored interests. These loudly proclaimed a fine democratic principle, that which belonged to the people should be enjoyed by the people — — — not with bureaucratic restrictions — not as a social body — but as individuals, free citizens using what came to hand for their own private needs with no questions asked. It was sound Gilded Age Doctrine.

"This was laissez faire raised to the 'nth degree. It was every man for himself and the Devil take the hindmost. However, while the tide was running full and business was rolling ahead, trouble spots soon appeared. Came the Credit Mobilier, the Whiskey Ring scandal and divers other disconcerting exposés. The doctrine of preemption and exploitation was reaching its harvest. Within the next half century America with its heritage of crude energy — greedy, lawless, capable — was to be transformed into a vast middle class land dedicated to capitalism and creating the greatest machine-order known to history. It was an America to which Jefferson, Jackson and Lincoln would be strangers."

Acting under pressures from the farm group which had become alarmed at the trend and disturbed as to what it meant to their well-being. Congress in 1887 passed an Act to Regulate Commerce, one of the first slow-down signals on the broad highway over which free enterprise was driving full tilt with no speed laws, and in 1890 the Congress enacted the Sherman Anti-Trust Law, which, after a long legal controversy, was declared by the United States Supreme Court in 1897 to be valid. A small beginning also was made in the first stages of regulatory control of Utilities, principally Railroads which for years had driven the grangers to desperation by oppressive and

arbitrary rates and policies epitomized by Commodore Vanderbilt's "the public be damned."

In this beginning of governmental control the principle was laid down that business was not to be allowed to run regardless of the public interest and that it must recognize the obligation to serve and that the service rendered must conform to certain minimum standards of quality and that the rates charged must be reasonable and equitable. Then it was that government took initial stand on the issue of control of the enterprise system. It was a decided change from Uncle Sam's previous role of a benign Santa Claus, for old Sam put on the badge of a traffic officer and started to regulate industry and commerce. Since then there has been a continuing and marked increase in the scope and character of governmental control of business.

In the early days of American business it had been believed that free competition could and would produce fair prices, insure quality of service and regulate rates, but as time passed and business burgeoned, it came to abhor the idea of free competition and did everything it could to eliminate its prophylactic possibilities. It was then that business turned to the organization of pools, trusts, and finally cartels to regulate production, maintain prices, control markets and emasculate competition.

In a profit economy no other consummation was possible for after the free supplies of the Great Barbecue feasts were preempted the struggle came to maintain one's position at the table and, if need be, crowd out obnoxious competitors. Patent controls, price fixing through restricted retail outlets, agreements to refrain from raiding a competitor's territory in return for marketing privileges in one's own chosen area, refusal to make available essential machinery except under leasing arrangements, which contracts stipulate operating conditions, these are but a few of the methods business capital used and still uses to protect its market, its prices and rates.

With the emergence at the beginning of this century of great mass production industries, competitive pressures became even more intense and explosive, and those tremendous producers with their great pools of capital and superb management skills have expanded until, to quote the Brookings Institute statistic, 80% of the commodities manufactured by mass industry are today produced by 20 great organizations.

What I have said thus far is not meant to unequivocally condemn business. My remarks are intended only as bold brush strokes hastily put on canvas to picture in a graphic way the present status of business operating under a so-called free enterprise systems, not only business in this country but in every industrialized nation.

Mass production organizations today appear to dominate that picture because of their conspicuous size, but they have made available a tremendous quantity of material goods, most of which is good quality, and this great volume of standardized products has made possible a steadily reduced price level, for low prices make available enlarged sales. Because it is large

it must not be assumed that big business monopolizes the country's employment. In a total national labor force in 1940 of 27,541,243, 40% of the employees were in plants employing 99 men or less, 29% were in plants using 100 to 999 employees and only 30% of the total were working in plants using more than 1000 persons each.

As American business took on stature and came to use more aggressive tactics, American labor was compelled to organize for its own protection. The Union movement grew slowly under great handicaps but eventually and in a large measure as a result of the boom and depression of the 20's and early 30's (the greatest in world history), a cycle which shattered national morale and created suspicion in the minds of the middle class as to the proclaimed benefits of unrestrained competition, labor was given a legal status far exceeding anything it had previously held, with the result that today it is united in strong blocs and confronts mass production industry with demands for rights to audit accounts, examine balance sheets and perhaps to supervise its other policies. This, to put it mildly, is vastly disturbing to business capital and management.

There is much to say for the businessman and his ventures. He is not the calculating, predatory villain left-wing periodicals depict him. As the plant employment statistics I just read indicate, for the most part he is a small businessman or group of stockholders operating a small business. He tries to keep close to his men, or did before labor legislation interfered, and he wants to do the best possible for them in order that he and they stay in business. He belongs to local chambers of commerce and trade associations. He tries to keep in touch with economic trends and market developments, but with OPA regulations, high taxation, reconversion problems and the labor laws to harass him, he has small time to think about anything other than keeping his business solvent and going.

No business can succeed which is ruthless and indifferent to the public and labor's well-being. To succeed it must make a product or offer a service of quality at an acceptable price and back up its offering with a record of fair treatment to the trade and to its employees. Otherwise it cannot continue. Those intangible essentials are items which are lumped under the heading of "good will," an item which seldom appears in today's accounting as an asset entry on the balance sheet of business. But it is an asset and a valuable one. Businessmen are not congenitally evil. They want to do the fair and right thing but they are part and parcel of a system based on profit, a system which operates only if a profit is produced. If there is no profit, there are no jobs except for the staff of the bankruptcy court. Competition today is tough and savage, not only between producers of similar commodities and services but between organized capitalized business as opposed to the rapidly expanding cooperatives, both of producer and consumer type; the competition of one raw material versus another for public acceptance, such as wood versus steel, and steel versus light metal alloys; there is cartel against cartel fighting for control of the world market and finally there emerges the possibility of a contest between industry in countries which base their economy on private enterprise versus state-owned enterprise operating under a communistic philosophy.

Despite the fact in past history that in certain present day situations business appears to be heedless and blind to its own best interest, it has in recent years endeavored to regulate its operations in a way that will work for the public interest and for the good of its employees. Evidence as to this is seen in the great good accomplished in accident prevention, in bonus payments to those who remain on the job and who improve their hourly production, pension plans, health and hospitalization insurance, state unemployment programs, which first came from the joint demand of business and labor; also as with Proctor & Gamble, to give a guaranty of minimum annual employment to labor. But of late government, instead of business, has taken the leading position in the promulgation of programs which, in the first instance often were originated by businessmen and today the government is planning to move even further towards the control of such corrective and regulatory activities as federally sponsored health and hospital insurance, legislation for Federalized medical care, and the bill now before Congress which has for its object a Full Employment program.

Since Unions strengthened their legal status and grew in numerical strength it has become well nigh impossible for an employer to take any position in the policies for his labor, no matter how beneficial they might be, and this is especially true when his plant is unionized. Such a business cannot instigate a policy of labor management, which in all sincerity it may feel to be of benefit to its employees. It can deal only through representatives of the shop union and as a result management has been forced into a defensive position and labor has taken the offensive. The John Does and the Joe Doakes, and all the rest of us in the middle of this scrap, are questioning the merit of some of this fight, for the public finds itself in a squeeze between two great contending powers. It feels that its interest is not sufficiently recognized nor safeguarded. Something eventually will be done to bring a balance for the public will demand it. When that debate begins in Congress and corrective legislation results, it is hoped that the outcome will be the product of fair and open-minded consideration and not tinctured with spleen. In the beginning the pendulum swung too far to the right and stuck there too long. Now it has gone far to the left. For the good of the country and all of us it must be brought to a sane middle position so that progress will continue.

MONEY AND FISCAL POLICIES

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The keynote of our conference is "Dynamic Factors Affecting Agricultural Economy." The dictionary defines the word "dynamic" as "having to do with disturbances of the equilibrium of economic forces, whether caused by the sudden introduction of exceptional conditions or by progressive change in the standards and habits of a people." In light of this definition, a change in the supply of money in the United States from 67 billions to

164 billions in five years is certainly dynamic; while the change in our mechanism for the control of the money supply might be described in more colloquial language, not merely as dynamic but "full of dynamite."

Dr. DeLoach has rightly designated "price" as the hub of the economic wheel. Money is a spoke in the wheel of which price is the hub.

The buying power of money, like the buying power of any other commodity, depends upon supply and demand. Too often we have overlooked this fact. When we try to forecast the price of wheat, we always study the probable supply and demand for wheat, but we overlook possible changes in the supply of money. We are quite alarmed over the fact that the production of our farms has increased 30 percent in the last five years, but ignore the fact that the supply of money has increased not 30 percent but 300 per cent. Suppose that the supply of wheat had increased by 300 percent, and suppose also that some new chemical process of growing wheat had been discovered whereby wheat could be grown in indefinite amounts without soil and with small expense. And suppose Congress controlled the patents.

The indifference of the American businessman to monetary matters in the past may be justified or at least excused on the grounds that monetary changes have been so small and so slow that the businessman has found it expedient to direct his attention to other matters of more pressing importance. As applied to the past, that point of view might be accepted, at least with reservations, but for the present and for the immediately foreseeable future, it must be challenged and I am challenging it here today.

Right now, changes in the supply of money are more important to agricultural prices than anything that is likely to take place within the field of agricultural production or consumption.

These monetary problems which have suddenly become of so much concern to the businessman are not only new but they are difficult to understand. The difficulty of the task, however, does not lessen its necessity. A full understanding of change involves consideration of three things: the past, the present, and how the present was evolved from the past. I shall therefore take a few minutes to outline some past history and background which are pertinent to the problem as we find it in January of 1946.

From the dawn of history down to about the time of the American Revolution and the Napoleonic wars, the common money of the world was gold and silver. These metals were valued on the basis of their market price as metal. They were commonly made into coins of various kinds but coinage merely measured, with more or less truthfulness, the weight and fineness of the piece of metal coined. In all cases the value of the money was the value of the metal and not the printing on its surface. The amount of such money available was dependent entirely upon the success of miners in finding workable mines.

Beginning about the time of our Revolutionary War we find credit money coming into use. By credit money we mean promissory notes or

similar credit obligations that are used as money. Very early some important things were learned about credit money. Promissory notes or other credit obligations, if to serve as money, must meet three qualifications: (1) payable on demand, (2) payable in convenient denominations, (3) have a credit standing sufficient to make them generally acceptable throughout the country. These qualifications are still necessary if credit obligations are to serve as money.

People found credit money convenient and preferred it to gold or silver for most transactions.

Finally banks learned that this preference for credit money was so great that they could safely issue more promises to pay gold on demand than they had gold in their vaults, provided, however, that this credit money was not handed out miscellaneously but was loaned; that is, issued in return for well secured promises to pay it back to the issuing banks. This point of loaning credit money instead of handing it out promiscuously cannot be emphasized too strongly, since it is the cornerstone of all sound credit money.

As credit money became more popular the amount of gold necessary became less. First, about one dollar of gold to five dollars of credit was enough, and finally around one dollar of gold to ten dollars of credit. These ratios were found to be sound banking policy. Some bankers, however, did not follow sound policies or even honest policies, so governments stepped in and more or less regulated the ratio of credit money to gold in order to keep the ratio within the limits which banking practice had proven to be sound. This was the approximate situation in the United States and in Europe prior to 1933.

This credit money was payable in gold on demand. In the United States up to 1933 one dollar in credit money could be exchanged for 25.8 grains of gold or vice versa. We spoke of this free exchange between gold and credit money at a fixed ratio as being "on the gold standard." To the man on the street it meant that he could use either gold or credit money as he preferred.

Meanwhile two forms of credit money came into use, both conforming to the requisites of good credit money but differing so widely in their mechanics as to be very deceiving. I refer to bank notes and bank deposits. Bank notes are simple printed promissory notes payable to the bearer on demand. We see these every day in the form of Federal Reserve Notes, our most widely used paper money. At one time all banks issued this type of bearer demand notes, but in recent years only the Federal Reserve Banks are permitted to issue them.

The other form of credit is bank deposits. When the customer puts into the bank a check, currency, or his own note, he calls this a "deposit." In return the bank gives him a "deposit slip." This deposit slip looks like a warehouse receipt. It says that the customer has deposited such and such items. In the eyes of the law, however, that deposit slip is equivalent to a sort of promissory note from the bank, which if written

out would read like this:

"Bank of Corvallis hereby agrees to pay to the written order of John Doe any amount or amounts up to a total of the amount deposited; said order of John Doe to be in writing and signed with the same signature as the signature now on file in the offices of this bank. Payments to be made in any kind of lawful money of the United States that the payee may demand."

This promise would not only be signed by the proper officers of the bank but it would be endorsed and guaranteed by the Federal Deposit Insurance Corporation. There is, of course, no such document in existence but its provisions are all in the Statutes. Furthermore, the instant the bank fails to make good on a single such promise, its doors are closed and its affairs liquidated.

Besides the banks, the government also issues credit money. Some of this government credit money are simple promissory notes payable to the bearer on demand. Some of it does not appear to be any kind of promise to pay, yet such is actually the case. The law requires that the government exchange one kind of credit money for another at the request of the customer. Therefore, even the silver dollar becomes in effect a promissory note. The silver metal is not worth a dollar but the government will give the holder a dollar in any kind of lawful money he wishes.

The Federal Reserve Banks issue both bearer notes and deposit slips and exchange one for the other on request of the customer.

How did all of this credit money originate? In the beginning gold and silver were put into the banks in exchange for bank notes or for the promises of the banks to honor checks. From there most of the gold went into the United States Treasury in return for various kinds of credit money. Then customers began depositing notes and bonds in exchange for credit money, and now the amount of credit money that has been issued in exchange for notes and bonds is about ten times the amount that has been issued in exchange for gold or silver.

You should remember, however, that in the beginning the banks owned a very considerable amount of our supply of gold and silver. This has been exchanged for government credit money but it gives the banks a nucleus which they own and which they do not owe to their customers. This nucleus owned by the banks is the cushion or reserve which keeps the system in balance and guarantees the payment of the credit money.

Most deposits are merely exchanges between the customer and the bank of some kind of money which the customer does not want for a kind which he does want, which is, in this case, the promise of the bank to honor his checks. In such deals "nothing new has been added." On the other hand, when the customer borrows money from the bank, he deposits his note. He does not usually think of it in that way but his deposit slip will show that he deposited a note and not checks or currency. In return he receives the same unqualified promise to honor his checks as

if he had deposited checks or currency. We note that all alleged resemblance between a deposit slip and a warehouse receipt disappears right here. The last thing the customer wants is for the bank to hand back his note.

The important point of this transaction is that the bank's promise to honor checks is money, while the note which the customer deposited is not money. The customer's note is not money because it fails to meet our three basic requirements for credit money; that is, (1) it is not payable on demand, (2) it is not of convenient denomination, and (3) it does not have sufficient credit rating to make it widely acceptable throughout the country. Through this exchange of credit we have, therefore, brought into existence new bank deposits which were not in existence before.

This new money is taken out of existence by the reverse process; that is, by the payment of the customer's note with a check. This is a mere cancellation of debts. The customer gets released from his obligation to pay the bank by releasing the bank from its obligation to honor his checks. Both debts are wiped off and cease to exist.

This technique of issuing and retiring credit money is known in economics as "the banking principle", in contrast with the "currency principle" in which the government merely hands out paper money in payment of current expenses and without any provision for its repayment or retirement.

So far, I have been dealing with conditions as they have existed, with minor modifications ever since the Civil War. Now for the significant recent changes.

We went off the gold standard in 1933. Gold was taken out of circulation and credit money was no longer exchangeable for gold. These changes in the mechanics of our monetary system are of far-reaching importance. They are dynamic. Let us study them with care.

First, the money of the United States is today one hundred percent credit money and nothing else. It consists entirely of promises to pay, either in the form of printed notes payable to the bearer, or as obligations of banks to honor checks. It is credit money issued in part by the government, in part by the twelve Federal Reserve Banks, and mostly by the 14,000 commercial banks of the nation under state and federal supervision. This credit money is good money. It will pay any debts and it will buy anything that is for sale. The fact that our money is good money, yet entirely credit, drives home the fact that money is not wealth, although it does enable the man who has it to take wealth away from the man who does not have it.

A change from 90 percent credit money to 100 percent credit money would not be so significant were it not for the fact that when it becomes 100 percent credit, there ceases to be any physical limit to the amount of money that can be created and put into circulation.

Prior to 1933 our credit money was interchangeable with gold, and years of banking experience had demonstrated that in order to keep it

interchangeable the amount of credit money could be allowed to be more than about ten times the supply of gold. The supply of gold, in turn, was a physical quantity and could not be altered by law, policy or administrative order. The only way it could be increased was to dig it out of the earth, providing you could find it. Now that our money is all credit and not interchangeable with gold it can be increased or decreased in any desired amount and without any limitations whatever. This is the dynamic and revolutionary thing we face today. Its implications are immeasurable.

I am aware that the Federal statutes still limit bank reserves in terms of the gold supply, but that relationship is not determined by any economic or physical law and can therefore be changed at the will of Congress. Congress might as well say that the bank reserves should be so many times the distance from Corvallis to Portland.

Has Congress abdicated its constitutional powers to coin money and issue bills of credit? Most emphatically "no"! It is true that the banks issue most of our credit money but only under the authorization and limitations as set forth by Congress. The Bureau of Printing and Engraving also prints credit money but only as Congress authorizes. Congress, therefore, still retains its full constitutional rights but having once broken away from the time-honored custom of making our credit money interchangeable with gold, there are no limitations to the amount of money Congress may authorize but its own free will and good judgment.

Our banking reserve system is too complicated to discuss here, and even if there were time, the technicalities are not important. The important thing is that the Federal Government, through the reserve system, controls the ceiling on the amount of credit money in this country and that ceiling may be indefinitely raised or lowered by Congress as it sees fit. In fact the Federal Reserve Board may raise the ceiling to four times its present level or reduce it to zero under authority of existing statutes.

Most of us are aware that the Federal Reserve Board has the power to change the reserve requirements of our banks within certain limits. Only a few technical students of money and banking know that the Federal Reserve Board can change the actual amounts of reserves which our banks have on deposits with the Federal Reserve Banks and to increase or decrease these deposits practically without limit. This is done through a bit of monetary sleight of hand known as "open market operations." It is done with government bonds. It is not new but until the war the Federal Reserve Banks never had enough government bonds to make it effective. Now it is all-powerful.

While discussing reserve, let me pay my respects to the so-called "100% reserve plan." It is easy to quibble about the word "reserves", but as the man on the street understands reserves, there are no reserves behind our monetary system except the good sense and judgment of the American people as effectuated through Congress and our elected officials. Basically there is no other reserve, either 100 percent or one percent.

The term "legal reserves" as it is used in banking circles is a technical legal term, and refers to the mechanics whereby the government puts a ceiling over our money supply. Cutting through all of these technicalities, the important point is that the ceiling on our money supply is established by the government and at whatever point the government wishes.

So much for the ceiling. Now for the floor. The floor under the amount of credit money in the United States is the amount which bank customers are willing to borrow and which the banks are willing to lend. Up to the depression bank credit always tended to approach the ceiling. During and following the depression years bank customers got scared, and from the depression to the war, bank deposits were consistently far below the legal ceiling.

Then came the War and with it the astonishing spectacle of one customer of unquestioned credit rating borrowing from the banks, sums that by all previous measures are astronomical, and at interest rates that seem infinitesimal. I refer, of course, to the United States Government.

In ten years, that is from 1936 to 1945, the borrowings of the Federal Government from the banks of this country have increased from 14 to 94 billions, while in the same time the borrowings of all other borrowers than the government have increased from 30 to 36 billions. Prior to 1930 it was rare for the banks of the country to have more than ten percent of their loans and investments in government securities. It now averages over 70 percent.

Here again there is more than at first meets the eye. As I have already pointed out, the volume of bank deposits has always depended upon the amount which is borrowed from the banks, but the total borrowings were made up of so many different loans that the effect of the borrowings of any one customer on the total deposits was infinitesimal. Even the loans of any one bank made no measurable effect on the total. Some bank operators who limited their observations to their own bank would argue that there was no relation between loans and deposits.

Now, however, we have this one borrower whose borrowings are so large that they determine the total volume of deposits.

I have already pointed out that the government controls the ceiling on bank deposits. Now we see that as the big borrower the government also sets the floor. Therefore, the government now has full control over the amount of bank deposits in this country, and since paper money and bank deposits are interchangeable at the option of the customer, control of bank deposits means control of our entire money supply.

This control is not exercised through rule or regulation but by controlling the amount which the government borrows from the banks. Right here is where trouble starts. The government does not borrow money from the banks merely to increase bank deposits. The government borrows from banks the money which it wishes to spend and which it does not wish to obtain in any other way.

The monetary policy of the government is therefore controlled by its fiscal policy. In the thinking of government officials, the effects of monetary policy upon the economic welfare of the nation is completely overshadowed by the needs of the government to borrow money.

Bank deposits have trebled since our defense program began. We say that the government has the authority to limit bank deposits. Then why not do so instead of trying to hold down prices with the OPA in the face of all this increase in money?

There are very few government officials who do not look upon this increase in bank deposits with great misgivings, but in order to prevent it the government would have to borrow less from the banks. In order to do that, it would have to either spend less or tax more. When Washington, D. C. faces the choice, it lets bank deposits climb as fast as they will. This does not imply any criticism. You and I would vote that way. The point is that the amount of our bank deposits and of all kinds of our money is now completely at the mercy of the needs of the government to borrow from the banks.

Many economists both within and without the government have long advocated a "managed" currency in which the amount of money would be adjusted to meet the economic needs of the country. Many New Deal officials have been working for twelve years to reach this goal. Now, however, when the government actually has the money supply of the country completely under control, that control is being used, and apparently must be used, to enable the government to borrow money rather than used to provide the country with an adequate and proper amount of money for the transaction of its business.

The amount of money in the United States has increased during the War until it is far greater than can be used in transacting our business at current price levels. This excess of money is exerting a terrific inflationary pressure that threatens to break forth in an orgy of price increases in spite of all the efforts of the OPA.

But are the people of this country willing to balance the Federal budget so that the government will not have to borrow more and more from the banks and thus inflate our money supply more and more? So far the answer has been an emphatic "No." We all give lip service to the idea of controlling inflation but we are not willing to pay the one and only price and that is to balance the Federal budget.

There is no new principle involved in this present situation. The new thing is that government borrowing from the banks has grown to such proportions that it now controls the money supply of the country. During World War I government borrowings from the banks increased by six times, but at the peak never amounted to more than 30 percent of the total outstanding bank credit.

Now, however, government borrowings made up 70 percent of the outstanding bank credit. During this war, therefore, the Federal government has come into complete control of our banking and monetary system but

simultaneously has become the chief borrower. Now since we are off the gold standard, this chief borrower can borrow unlimited amounts with no restrictions but its own will and judgment.

What are some of the practical implications of the developments which I have outlined? Here are two: First: Increased government borrowing from the banks means more monetary inflation. These increased borrowings may come about through failure to balance the Federal budget or by the sale of government bonds by private individuals and corporations to the banks. As citizens exerting such pressures as we can upon our lawmakers, these points cannot be overlooked.

Second: With 70 percent of our bank lendings going to the Federal government, we can forecast the trend of bank deposits to the extent that we can forecast the trend of government borrowings from the banks.

The importance of our money supply to our economy does not require emphasis with this group. It requires so much money to transact the business of the country at the current volume and at the current price level. Any more than that is superfluous and either reflect itself in higher prices or will remain relatively idle. Just now the OPA is holding down prices, so we have much money that is inactive.

We are told of the danger of spiraling prices but prices cannot spiral except in the presence of more money than is needed to transact our business at present prices. How long the OPA can hold the present level of prices against the pressure of our present large volume of money, only time will tell. The hope is that our volume of business measured in goods may increase to the point where we need all of our present money supply.

So far I have discussed this matter in rather general terms. Now I would like to present a table which will show what all of this means in dollars and cents. It will show you our money supply over a period of thirty years and the assets which are behind that money supply.

THE MONEY SUPPLY OF THE UNITED STATES

AND SUPPORTING ASSETS

Year as of June 30th	<u>MONEY SUPPLY</u>	<u>SUPPORTING ASSETS</u>			
	Deposits, paper and coin outside of banks (Billions)	Owed to banks by the public	Owed to banks by the govern- ment	Gold Stocks	Total assets against the money supply
1914	20	20	1	2	23
1915	21	21	1	2	24
1916	25	24	1	2	27
1917	29	27	2	3	32
1918	32	28	4	3	35
1919	37	31	6	3	40
1920	42	37	5	3	45
1921	39	35	5	3	43
1922	41	35	6	4	45
1923	44	38	6	4	48
1924	47	40	6	4	50
1925	51	43	6	4	53
1926	53	46	6	4	56
1927	55	48	6	5	59
1928	57	52	6	4	62
1929	57	53	6	4	63
1930	58	53	6	5	64
1931	55	48	7	5	60
1932	47	37	9	4	50
1933	43	32	10	4	46
1934	47	31	14	8	53
1935	51	30	17	9	56
1936	57	31	20	11	62
1937	59	32	20	12	64
1938	58	31	19	13	63
1939	62	31	21	16	68
1940	67	32	22	20	74
1941	75	34	26	23	83
1942	83	34	33	23	90
1943	112	30	65	22	147
1944	138	33	91	21	145
1945	164	36	116	20	172

NOTE: The excess of assets over money supply represents a rough approximation of the liquid capital of banking system available as an additional guarantee against the money supply. The actual excess is somewhat larger than these data would indicate since the data on paper money and coin are based upon the amount issued and do not allow for money lost or destroyed.

In conclusion and summary let us again review some history. For hundreds of years the only money was gold or silver and the amount of money was measured by the amount of gold and silver we could dig out of the ground. Then followed a century or so when this gold and silver was supplemented with credit money, but the credit money had to be kept within certain well-known ratios to gold. The total volume of money was, therefore, still determined by the gold supply and not by government policy.

In 1933 we cut loose from gold and for a few years our money supply was floating between the amount which business desired to borrow from the banks and the amount which the government was willing to permit it to borrow. This was supposed to be a "managed currency" in which the amount of money was controlled by the government with a view of adjusting the total amount to the business needs of the country. It did not work, however, since the public was not willing to borrow enough from the banks to bring the money supply up to the desired level. Now the amount of money is governed by the amount which the government wishes to borrow, or needs to borrow, from the banks.

Unfortunately the amount of money which we have to transact our business is not managed with a view to meeting that need but is completely at the mercy of credit needs of the Federal government; that is, the amount of money which the government wishes to spend in excess of the amount which it raises from taxes or can borrow from non-banking sources. Under our present system there is no limit to the amount which the government can borrow but its own judgment. In our political thinking and in the planning of our private business this new situation cannot be over-estimated.

In our political thinking we must face frankly the fact that the government can inflate our money supply just as easily by depositing bonds in the banks as by printing demand notes which we call paper money. We must face the fact that if we vote more appropriations than we vote taxes the deficit will be raised by this inflationary process which we have been describing. Our money supply and our government debt are now so closely related that they must move together. We just cannot make them move in opposite directions much as we might wish to do so.

In our private business we may count on a money supply that will move up or down as the government debt moves up or down. The present money supply will be reduced if the government debt to the banks is reduced. The money supply will remain constant if the government debt to the banks remains constant. The money supply will increase if the government debt to the banks is increased.

It is not my purpose today to forecast the trend of government debt but it is my purpose to point out that whatever is the trend of the government debt, our money supply goes along with it.

The discussion so far indicates a very definite danger of further monetary inflation. That danger cannot be denied. On the other hand there is a very favorable side to the picture and that is that the danger of

deflation is reduced to a minimum. We might even say that that danger is entirely absent. That is a very great change from the situation that existed at the close of World War I. At that time our money supply had expanded to the absolute limit of our gold supply and deflation was inevitable unless we were to go off the gold standard and we were not in a frame of mind to do that. The effects of that deflation still burn in our memories, but it could not have been avoided with the monetary system then in use.

Under our present system of 100 percent credit money, and such deflation as occurred in 1920 is not only unnecessary but highly improbable. For that we can be truly thankful.

In the beginning of my discussion I said that changes in the supply of money are now more important to agricultural prices than anything that is likely to take place within the field of agricultural production or consumption. Now, may I give my reasons for that statement. They are these: Any changes which may take place in agricultural production must be within definite physical limitations, such as, acres, soil, climate, and manpower. Any changes which take place in the consumption of agricultural products must be within the physical limitations set by the number of people to be fed and by their nutritive needs.

When our money was on the gold standard, any changes in the total were limited by our ability to find and mine gold. Under our present monetary system, however, changes in the volume of money are without any physical limitations whatever. Our money supply is limited by the good sense and judgment of our government, and its ability to resist the temptation to finance its needs by the easy method of depositing bonds in the banks rather than through the harder method of taxation.

FEDERAL ECONOMIC LEGISLATION

Federal Programs as an Aid to Postwar Agricultural Readjustments

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The underlying theme of today's discussion is "Adjusting our economy to meet new problems." This is a challenging subject. It is one which does not lend itself to simple formulae, dogmatic answers or permanent solutions. The new problems are ever-changing. The adjustments must therefore be flexible in character.

What will be these "new problems" of the postwar period? Most of us are familiar with the character of the problems which American agriculture encountered after World War I. Some of the more important could be catalogued as follows:

1. A drastic shrinkage or loss of wartime export markets.
2. A collapse of wartime price levels for farm products.
3. A legacy of greatly expanded debts incurred by farmers under the stimulus of high prices and an optimistic view of future price levels.
4. The tendency of farm production to continue at the high level attained during the war long after the wartime markets had largely disappeared.
5. A tendency for production and marketing expenses to remain high in spite of the sharp decline in prices received by farmers.

Whether we regard these as the farmers' postwar problems or merely as symptoms of the broader economic aftermath of World War I, there can be no doubt of their reality as grim facts which farmers faced through the nineteen twenties. Then to this list was added the complete domestic economic collapse of the early nineteen thirties which engulfed not only agriculture but the entire economy.

It is important that we not confuse the immediate postwar readjustment problems with those of the great depression of the early nineteen thirties. It is well to remember that after a sharp but temporary interruption in 1920 - 1921, a decade of relatively high industrial activity followed the close of World War I, and that all of agriculture was not in acute difficulty all of the time during that decade, although it was a trying time for most farmers who entered the period with substantial indebtedness.

Most students of the readjustment problems which farmers face at some time in the postwar years ahead would list as potential problems the same factors which have been enumerated for post World War I with one very important exception. So far - and I call your attention to the limitation implied in the words "so far" - farmers have generally utilized their improved wartime incomes to reduce their mortgage indebtedness and strengthen their liquid financial reserves. But the pattern of increase in farm land prices has been quite similar to that of World War I and there is still the necessity for great caution in order to avoid the repetition of this major error on a substantial scale. This is particularly true with respect to the purchase of farms by veterans and former war plant workers in the next year or two.

In the months ahead it appears probable that the foreign relief demand for food and fiber will tend to maintain a high level of farm products exports. But this demand will eventually decline as transport facilities are restored and as the local food production and distribution facilities of the war devastated countries are returned to more normal levels. Once the acute relief stage has been passed it is to be expected that most foreign countries will prefer to use their limited dollar resources primarily for the purchase of much needed machinery and equipment for the restoration or modernization of their industrial plants and transportation. Such foreign demand for American farm products as persists after the relief period will, in all probability, be less urgent in character

and less dependable as a continuous market.

This eventual decline in export markets for farm products will be of particular importance to our producers of wheat, cotton, lard, vegetable oils, rice, and certain fresh, dried and canned fruits. It is all the more important in view of the established tendency of high agricultural production, achieved during wartime, to persist long after wartime and relief demands have changed.

There is little reason to expect that in general the farmers' production expenses and the level of marketing cost will quickly return to prewar levels. Present indications, in fact, point to somewhat higher prices for many of the durable and semi-durable goods of the type which farmers require for their farms and homes. All wartime increases in labor costs have probably not as yet been fully reflected in higher prices, but the eventual effect of these increases is obvious,

But there are certain other factors in the immediate postwar situation which should not be overlooked. The first of these is the tremendous shift in population between 1940 and 1945. Total population increased by 7,500,000 between 1940 and 1945 but what is more important is the fact that non-farm population increased by about 12,500,000, or more than 12 percent, during these five years. By 1950 a further increase of 6,500,000 is anticipated, much of which will probably represent a net increase in non-farm population. Such shifts in population will inevitably be reflected in a permanently enlarged demand for the products of commercial farms.

A second favorable factor is the probability that domestic demand for farm products will continue at a relatively high level during the early postwar years. There is a tremendous backlog of demand for durable and semidurable goods of the type which could not be produced in sufficient volume during the war. What is equally important is the fact that this potential demand is backed up by an enormous increase in the liquid assets of individuals and corporations. Currency in circulation has increased from about seven billion dollars to more than twenty-eight billions. Demand and savings deposits of individuals and corporations have more than doubled. Large reserves have been put aside in war bonds, and individual debts have been greatly reduced. This last, the reduction of private and corporate debts, is in striking contrast to the situation at the close of World War I.

Another factor which will help to maintain a high immediate level of postwar employment is the urgent demand for goods and services in connection with the reconstruction of war-torn countries. Many foreign countries have substantial cash balances in the United States and others will receive the necessary minimum of dollar credits. These balances and these credits will be used largely for goods and services, machine tools, machinery, food, transport equipment, etc. Such demand will undoubtedly be important when measured against normal peacetime volume in many industries.

It is possible, however, that these favorable factors may do no more than provide a breathing spell of a few years during which farmers may reappraise their postwar prospects and problems and also the measures necessary to cope with them.

In the period between World War I and World War II - 1920 to 1941 - the Federal government initiated a variety of new programs in behalf of a distressed agriculture. In a brief discussion it is not possible even to describe all of these programs, much less appraise their effectiveness in the light of their objectives. These programs covered almost the whole range of known possibilities - cash payments from the Treasury, credit of all types and varieties, adjustment or control of acreage or production, marketing quotas, regulation of movement to market, stimulation of farmer co-operatives, export subsidies, direct and indirect price fixing, governmental acquisition of surpluses by purchase or by loans at or in excess of market prices, diversion of surpluses into relief or by-product channels, issuance of food stamps or food surpluses to low-income families, etc. etc. Other types of programs emphasized soil conservation, crop insurance, improved farming practices, special aid to small or destitute farmers, assistance to migrant farm laborers, purchase of farms by tenants, etc. During this period also Federal-state agricultural research and educational programs were greatly expanded with special attention directed to the discovery of new industrial uses of farm products.

Since 1941 primary emphasis has been upon maximum food production and the use of special devices to greatly expand the supply of those products most needed. Nevertheless, most of the farm legislation passed during the inter-war years is still in effect and the agencies which administered the wartime programs have been charged with special responsibility for supporting farm prices at 90 per cent of parity through 1948.

As we face the early postwar years it is important that we adopt policies which are best calculated to cope with the causes of recurring economic distress in agriculture. Unless basic troubles are corrected there is danger that large segments of agriculture will become increasingly dependent upon government aid and control programs of one kind or another. Such dependence would obviously not be consistent with the vigorous type of agriculture from which this nation has throughout its history gained much of its vitality.

What are some of the basic lessons to be learned from the past twenty-five years of experience, research and study of farm problems? What to be learned from the extensive experimentation with farm programs designed to meet these problems? Without in any way attempting to suggest final answers to these broad questions, certain observations are presented for consideration.

Interdependence of farm and factory.

The interdependence of our modern economy has been amply demonstrated during the war. That a high level of consumer buying power is a stimulus to food consumption has again been emphasized. In spite of certain shortages, the civilian population has been exceedingly well fed - better fed than in any previous period, in fact - that is, the over-all average. The necessity of rationing changed many consuming habits, and while it had some levelling effects, it also helped to change and improve the diets of large segments of the population. After all, with blue points or red points

limited, a great many people with enlarged buying power felt the necessity of using these points for the purchase of products with which they were previously not too familiar. Thus a wide distribution of income made for the greatest per capita demand for food this country has known since it became primarily an urban nation.

It has long been recognized that a prosperous agriculture is a vital factor in the maintenance of a healthy market for a great variety of industrial goods. It should be equally obvious that the economic position of the farmer, and particularly the extent and stability of the demand for his products, is closely dependent upon the status of the economy as a whole. With general prosperity, a high level of industrial production and a wide distribution of consumer incomes go a strong demand for farm products.

The farmers' first line of defense, then, is the maintenance of a vigorous and productive economy in the nation as a whole. Farmers are vitally interested in the attitude of industry and labor toward a program of really full production. Writing in the New York Times recently, after a nation-wide survey of industrial centers, the editor made the following pertinent comments:

"While labor keeps talking about higher wages and management insists on higher prices, what the public wants is higher production. It wants to see more automobiles, radios and other consumers' goods, for which it has been waiting almost four years, put on the market in sufficient volume so that the average man can buy them, as quickly as possible

"Both inflation and deflation can be avoided by full production with high productivity. High wages, good profits, and low prices are all possible with full production.

"Unfortunately, it is the nation-wide controversy over the symptoms that is prolonging the disease and retarding the cure. Production is being held up while people squabble over wages and prices which will mean little unless we have mass production to give them meaning."

We all know that full production was a vital factor in winning the war. But much of the wartime production, which was paid for in considerable part by the creation of national debt, went into goods and services which have been consumed or destroyed on the painful and costly route to victory. As a result, we have a huge national debt, large holdings of liquid assets by individuals, and glaring shortages of goods and services of many categories. A vigorous program of full industrial production is the only program which can prevent this situation from becoming increasingly troublesome to all concerned.

It is natural for farmers to respond favorably to the idea of full production on the farm and in the factory. But, quite justifiably, many farmers are somewhat hesitant about adopting the full production slogan unless they are assured of the necessary companions along this highway of abundance.

Farmers have a still further interest in the maintenance of a high level of industrial production. A high level of industrial activity at home is a stimulus to world trade and to peaceful relations among nations. Only under such conditions can farmers expect to have even a moderate export market for such farm products as cotton, wheat, lard, dried and canned fruits and similar items.

Also of great importance to farmers is the fact that a program of full industrial production is the only constructive long-run solution to the basic problem of chronic under-employment in large segments of American agriculture, particularly in the South. Farm production increased by almost one-third during the war in spite of the fact that farm population decreased by one-sixth, that about 1,850,000 farm boys went into the armed forces, and the number of farm workers decreased by more than 12 per cent. Increased farm mechanization potentialities and other technological improvements in agriculture, coupled with a relatively high birth rate on farms, make it necessary that opportunities for employment in industry and in the trades and services be available in an expanding economy if under-employment and low incomes in agriculture are to be avoided sometime in the decade ahead.

Progress has been made during the war in correcting some of the prewar population unbalance in agriculture which is incident to technical progress in agricultural production. We should not lose this progress by unwise back-to-the-land movements.

Farmers have then an interest of first importance in the policies and programs of government, industry, labor and finance which affect the general levels of business activity and the general level of prices of non-farm goods and services. The farming industry is committed almost by its very nature to a program of full production and its long-run prosperity is largely dependent upon the effective prosecution of corresponding programs of full production in other segments of the economy.

This is agriculture's first line of defense against recurring economic difficulties. The implication of this, if true, is that farmers should place less reliance on new legislation of a direct farm relief character and more reliance on changes in national policy which will lend maximum encouragement to an expanding economy.

Support prices and price policy.

Under an authorization which now runs through 1948, the Secretary of Agriculture is directed to support the so-called basic commodities (cotton, wheat, corn, rice, tobacco, and peanuts) at 90 per cent of the 1910-14 parity. Certain other commodities on which a proclamation was issued by the Secretary, calling for expanded production, are also to be supported on the same basis. Furthermore, the Secretary is directed, in so far as funds are available, to support all farm products on the basis of 90 per cent of parity.

This price support commitment places a very heavy responsibility upon the Secretary of Agriculture. Except for potatoes, no major price support program was necessary in connection with 1945 production of excess supplies. Recently a surplus purchase program for eggs was announced for the spring of 1946. As supplies tend to out-run demand in particular products, some difficult policy decisions, which may have future implications will have to be made. Some of the questions are such as the following:

1. Can a continuing program of price support for international commodities such as cotton, wheat, and rice, be maintained through 1948 -

- (a) Without cumbersome and uneconomic programs of attempted production control which will interfere with fundamental and, in the long run, more profitable adjustments?
- (b) Can such a program be harmonized with this country's broad post-war international trade program?
- (c) Can such a program be maintained without tending to accumulate surpluses which may make the situation even more difficult to handle after 1948?

One suggestion is that such commodities might be allowed to move to market in the normal manner and that producers be paid a price adjustment payment equivalent to the difference between the actual sales price and the legal support price. Such a program was used effectively with respect to cotton in 1935 and for certain farm products has obvious advantages over a continued program of dual prices and export subsidies.

- 2. Will Congress and the public support through 1948 a policy of foreign food relief in order to provide an outlet for any semiperishable or perishable products which the domestic market will not absorb at support prices? Will such outlets be available? If not, are we willing to face the possible necessity of having to purchase such products for wastage or destruction by government agencies?
- 3. Will producers of so-called basic commodities be required to impose acreage or marketing quotas in order to be eligible for such support if the applicable provisions of the Triple A Act of 1938 should become operative with respect to these commodities in 1947 or 1948? If so, what about the other commodities for which no such controls are provided under existing legislation?

Altogether, farmers should consider the hazards of "backing into" a new program of attempted production control as a means of implementing the program of price supports. The question may well be raised as to how far farmers wish to go down this road of "support" or "guaranteed prices." It may not be a "dead-end" street, but somewhere down this road, unless we use extreme care, are hazards to a vigorous and independent agriculture. There is an old Chinese proverb to the effect that "he who rides a tiger should have plans for dismounting." Farmers are properly interested in reasonable and temporary "support prices" to cushion the shock of postwar readjustments and to prevent the type of price collapse which occurred in 1920-21. But there is a limit beyond which it is obviously not safe to travel this road.

It is not suggested that Congress should withdraw the commitment to protect farmers from price collapse if it should develop. There is need, however, to authorize additional measures for protecting farm income without incurring the liabilities of the price-fixing approach in those instances where such an approach promises to create more problems than it solves.

Now a word about 1910-14 parity prices as a continuing base for the 1946-50 farm price policy. On this I should like to quote a statement edited by one of the best friends that American farmers have had in these past thirty years of farming in an unstable economy - Chester C. Davis, Administrator of the early Triple A. The statement is as follows:

"Farmers have fought for a quarter of a century to get the concept of purchasing power parity established in the law As a yardstick in remedying the disastrous collapse of the farm product price structure in the 1920's, the 1910-14 standard had merit. It has much less meaning for agriculture and the economy as a whole in 1946.

"Parity as an idea appeals to the public as fair and just. But used as a legal instrument to fix farm product prices, parity based on a relationship that existed thirty years ago has become a liability in American agricultural policy. Making it effective, by means of loans and purchase programs, continues outgrown price relationships and tends to perpetuate past production patterns; resists production changes that are in the farmers' long-run interests and builds up surpluses toward an eventual crisis and collapse; it tends to drive a wedge between internal and external prices of farm products that enter export trade, thus opening the way for two price systems, export dumping and other measures hostile to a liberal foreign trade policy A redefinition of parity is overdue."

An index of parity prices has real significance from the standpoint of the over-all relation of agricultural prices to non-farm prices. But in these days of hybrid seed corn, mechanical cotton harvesters, and similar developments, it has but limited usefulness as a yardstick for individual commodity programs.

There is one serious objection to changing the historical parity concept as presently used. There is always the hazardous possibility that a less satisfactory statistical concept might be adopted.

Soil Conservation

Perhaps the greatest permanent advance made in national agricultural policy in the past thirty years has been in the field of soil conservation. It is true that only a beginning has been made. Much remains to be done. All citizens have a vital interest in the prevention of soil erosion and the maintenance of our limited soil and water resources. Farmers must do most of the actual work of soil conservation, but the general public should bear a part of the expense through the continued support or research, technical advice and assistance, and in such other ways as experience proves to be effective.

With the passing of urgent wartime food production requirements, there is both the need and the possibility for renewed emphasis on balanced cropping systems and farming practices which prevent erosion and promote soil conservation. One may be pardoned for expressing the hope that the agencies of the U. S. Department of Agriculture and of the various states interested in soil conservation will work toward a more effective coordination of the official programs and services in this field of activity. However, this hope is more easily voiced than accomplished. Furthermore, we must beware of short-cut solutions to this problem.

A sympathetic layman recognizes the accomplishments of the Soil Conservation Service, the Agricultural Colleges, and the Agricultural Adjustment Agency in the field of soil conservation. This layman sympathy and understanding is not always prevalent to the necessary degree in official circles. There is danger that this situation may handicap maximum accomplishments in soil conservation and related fields. All of us

can do much, county by county and state by state, to keep the emphasis on common objectives and aid in the development of agricultural production and soil conservation programs which represent the maximum accomplishment consistent with the funds available. The problems vary county by county and state by state, but they can be met if approached with determined co-operation.

Crop Insurance.

Another field in which some beginning has been made but which is still largely unexplored is the field of crop insurance. More experimentation will be required, but the problem is not an insuperable one. Furthermore, it is one in which the non-farming public has a vital interest. Eventually such a program can be largely self-supporting, but the Federal government will have to continue to provide the necessary assistance for the development of such a program.

Closely linked with the problem of crop insurance in many areas is the development of more realistic crop storage programs. This is particularly true for wheat and other small grains which may be the most economical basis for the maintenance of livestock industries in such areas. To do this will require readjustment in legislation and in loan policies, with less emphasis on price maintenance and more attention to the maintenance of stable livestock enterprises as a part of the farming system of such high-risk areas.

Marketing Agreements.

Marketing agreements under certain circumstances have proven their merit in connection with the marketing of fruits and vegetables and in providing greater stability in the marketing of fluid milk and cream. Such programs have greatest value where they are used to regulate the flow of products to market, improve standards of quality, and otherwise contribute to market stability without attempting to establish or maintain artificial prices. Where the latter has been undertaken, the ultimate effect has been to postpone necessary adjustments or create new problems which tend to discredit the programs. With the experience gained in the 1930's, it should be possible to utilize such programs on a gradually increasing scale, provided they are geared to limited and proper objectives.

Surplus Removal and Improved Nutrition.

During the 1930's, the Federal government expanded substantial funds in surplus removal programs and on the food stamp plan with the double objective of maintaining farm prices and expanding food consumption. The obligation to maintain prices at arbitrary levels through 1948 may stimulate the development of similar programs in the interest of price maintenance. Past experience indicates that such programs are only slightly effective as aids to price maintenance unless the "surpluses" are moderate and the price goal quite low. Such measures are hardly justifiable except in a period of acute economic dislocation, and it is yet to be demonstrated that such an approach is the most appropriate one even then. Certainly it is hardly to be expected that such measures will be very effective in maintaining prices at 90 per cent of parity for any extended period of time.

Such an approach to the farm surplus problem, if it again develops, is also subject to the objection that it may overlook the relation of

"surplus foods" to a sound nutrition program. Continuous efforts to improve the diet of low-income families should be encouraged through education, school lunch programs, and in other appropriate ways. But too great reliance should not be placed on such measures as a solution of problems incident to low prices and excess supplies. Certainly priority should be given to measures designed to maintain an economic climate which will encourage full production of non-farm products, and the maximum use of food products by the purchases of consumers in the open market.

A farmer recently stated that "A favorite pasttime of the economists of this day is to point out the errors of those of yesterday, and of course to perform a similar service for their contemporaries. . . . The bad guesses of the dead economists of the slow-going past ought to warn living economists against oversureness in these swift changing times." There is much wisdom in this latter caution.

We do not live in the economic environment of 1910-14, or of the 1920's, or of the acutely depressed 1930's. At this juncture the nature of the post-war economic environment to which the nation and the farmers must adapt themselves cannot be accurately foreseen. We are in the slow process of developing that environment, both at home and in the far corners of the world. Much has been accomplished but a great deal more remains undone. In the hope of constructive results we as a nation have already consecrated to the task our finest treasures, our own sons and daughters. It is not possible to turn the clock back. We must strive to utilize our improved techniques in production, transportation, communications, and marketing in such a way as to achieve a higher standard of life for all our citizens and to contribute effectively to the maintenance of real world peace.

STATE ECONOMIC LEGISLATION

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and Student of State Economic Legislation

When I looked over the program of this Conference and my part in it, there came to my mind the case of the college student to whom was assigned the task of writing a paper on a subject of his own choosing. Later, he told his instructor that his subject was:

"Ignorance and Its Relation to the Objectives of
Academic Study."

Whereupon, the instructor said that he knew of no one who better exemplified the very heart of the subject.

The subject assigned to me is "State Economic Legislation." I suppose it includes existing as well as prospective legislation.

There are a great many laws now in force in this state that have some relation to state economy. Indeed, almost every law has. The effect of some is direct; the effect of others somewhat remote. Laws providing for general

education, technical training, protection of life and property, the inspection of factories and other places and activities, maintenance of commodity standards, industry advertising of dairy products, reforestation, development of mining resources, taxation, drainage, regulation of utilities, pensions, unemployment compensation, minimum wages for women and minors, may be referred to by way of examples.

There are several hundred pages in our statutes regulating many phases of agriculture.

The activities, authorized and supported by legislation, carried on by the Oregon State College, and the informed leadership it has provided, especially in the field of agricultural economics, have had, and will continue to have, a very profound and vital significance in the development of our state. Many of these laws follow a somewhat standardized pattern, and are found in other states, varying of course with local conditions. The continuing long-range effect of these laws upon the industry and the general welfare of the state is very great. They are stabilizing factors, without which there would be much confusion. But they are not miracles such as many seem to be looking for at this time. They do not possess dramatic and dynamic qualities. They do not, in the main, seek to direct, control, and plan for our private industries, but rather provide a frame-work within which people of this state may work out in large measure their own economic problems.

There are many serious problems affecting our domestic order and economy as well as our international relations. As to the latter, I have little to say, because they do not come within the scope of the subject assigned to me. We should, of course, work with all other nations to establish a lasting world peace, if possible, and cooperate to rebuild and stabilize world economy. We should do this without sacrificing our national autonomy, and within the reasonable limits of our capacity. It will not help, but I think in fact harm, all other nations if we sacrifice our system of government and the stability of our own national economy.

We now have a national debt of nearly 300 billions. This does not take into account the debts owing by states, municipalities, private corporations, and individuals. The national debt amounts to over \$2000.00 per capita, or between eight and nine thousand dollars per American family. Our present national debt probably equals, if it does not exceed, the aggregate debts of all the nations with which we were associated in the late war. This is quite a mortgage on the future of our youth now living, and quite a mortgage to hang on the cradles of future generations, and we are likely to have deficit financing for some years to come, thus increasing our national debt.

We should keep in mind, in our domestic and international thinking, that we have only about 6 or 7 percent of the population of the world, and about the same percent of its usable area. We do not have any substantial disproportion of the natural resources of the world. We are living in a world in which probably less than 20% of the population have the capacity, the desire, or the understanding to establish and maintain a representative form of government based upon a broad suffrage. Our commitments to feed, finance, and rebuild the shattered economy of other nations should be tempered with common sense, - generous common sense, but still common sense,

coupled with a sane appraisal of our capacity to perform.

In much of the discussion now going on throughout the country, a program of continued and expanding state and federal spending, planning, and control, is assumed. There seems to be a minimum of discussion as to how the farmer, manufacturer, wage earner, and other groups may go forward with the largest possible measure of freedom from State and Federal control. The industry of the whole country is now confronted with strikes, threatened or in progress, coupled with very definite threats of political reprisals. These disturbances in part have an economic base, but in my opinion they also have a very definite political base. It seems to me that one objective of the organizations promoting them, may be to establish a larger, if not dominant, control over the industry of the country.

State laws and policies may stimulate and help diversify production, increase efficiency, promote better marketing and distribution methods, and in many other ways aid the development of the state. But, if Oregon should embark on a program of planned and controlled economy, it would I think be a mistake and prove an ultimate failure. This for two reasons, among others; first, because it would be foreign to the spirit and genius of the Oregon people; second, because the field in which the state may now function with respect to its own industries is so limited and circumscribed by the new doctrine of federal supremacy there is little left that the state can do.

Nor should the state embark on a program of supporting industry by public grants or subsidies. Contrary to what seems to be a widespread belief, the public treasury is not a self-replenishing source of funds. Neither a state nor a nation, any more than a private individual or enterprise, can go on indefinitely financing deficits by issuing additional promissory notes without some time reaching a point where the notes are no longer marketable. This fact should be kept in mind particularly by our national financiers and statesmen, in dealing with the federal budget, and by the people in Oregon and other states when they feel the urge to organize future demands on the federal treasury.

In the field of planned and controlled economy in which the state assumes to fix and control prices, production, allocation of markets, and the like, Oregon has embarked on few experiments.

Years ago, a minimum wage law was enacted, affecting women and minors. It is still in force, but little used.

A few years ago a law was enacted authorizing a commission, upon the request and consent of a percentage of those engaged in the business, to fix the prices that might be charged by barbers. The law was held invalid by the Oregon supreme court. Another law of the same general nature was later enacted, but its validity has not yet been passed on by the courts.

In 1933, a law was enacted which was subsequently amended in several particulars. It authorized a commission, whose powers were later transferred to the Director of Agriculture, to regulate and supervise the fluid milk industry of the state, that is, that part of the dairy industry engaged in the production and sale of milk in fluid form for human consumption. This law is still in effect. It authorizes the regulating authority, in the language of the Oregon supreme court, which sustained the validity of the law,

"to fix the minimum wholesale and retail price to be charged for milk handled and sold in the state for human consumption in fluid form, to define and limit the geographical area from which fluid milk shall be produced for any given market or sales area, and to provide for the pooling and averaging of all returns from the sale of fluid milk and the payment to all producers of a uniform pool price for all milk so produced, and to determine what proportion of the milk produced by any producer shall be considered as marketed as fluid milk, and what proportion marketed as surplus, which is made effective through a system of market basics or quotas."

The reasons given by the court for sustaining the law would not be applicable to agricultural commodities generally. The fluid milk business is largely localized because of the nature of the product; its close relation to public health; the short period which must elapse between production at the dairy and use by the ultimate consumer, transportation problems and costs, and other factors peculiar to the fluid milk industry.

In 1933 a state agricultural marketing act was passed, which was held unconstitutional by the supreme court in October, 1935. Shortly after this decision was rendered, the Legislative Assembly, being in special session, enacted another agricultural marketing act, in some respects differing from the former act, but following the same general pattern. The validity of this act has not been passed upon by the supreme court.

This act dealt with dairy products of every character, except milk intended for human consumption in fluid form, also with deciduous fruits, berries, melons, tomatoes, all vegetables, and any canned, packed or processed product of these commodities, and all byproducts therefrom.

The controlling powers are vested in the State Board of Agriculture acting through the Director, who is authorized to fix maximum and minimum prices of any producer, processor, distributor, handler, or retailer; limit production of any commodity or product; restrict the quantity that any handler, etc., may purchase or sell in the state; control surpluses; prescribe price margins or spreads of processors, distributors, or other handlers, and regulate trade practices generally with respect to all such commodities.

Broadly speaking, the Director of Agriculture is given quite unlimited control of the production, processing, distribution, and prices within the state of the commodities covered by the act.

I do not express any opinion as to the validity of the act. There are obvious differences in the operation of the controls authorized by it and those in the act relating to fluid milk. The bulk of the commodities embraced in the act, other than fresh fruits and vegetables locally sold, would find markets outside of the state. Apart from the legal questions involved, it is not difficult to visualize the political impact of the enforcement of the act if the consumers in Oregon are required to pay fixed prices for what they purchase for use in the state, and like commodities were sold elsewhere at substantially lower prices. Another very practical consideration is involved in the fact that if the controls exercised under the law resulted in prices to consumers in Oregon higher than those prevailing in other states,

comparable commodities would flow into the state in interstate commerce. It is my opinion that in the main the act is unworkable. The Director of Agriculture informs me that no steps have been taken by his department to put into effect any part of the act, and that, since its enactment there has been only one request, made some years ago before Mr. Peterson came to office as director of the application of the act, and that was with regard to peaches. The application was denied.

For reasons which I will now briefly point out, there is not much the state can do in the way of legislation looking to a program of planned and controlled economy.

A new and very expansive interpretation of the Commerce clause of the federal constitution has been developed during the past seven or eight years. This interpretation has greatly diminished the jurisdiction and powers of the state, and has paved the way for converting our system into a highly centralized government exercising, if and when it chooses to do so, unlimited power in every state over practically all local affairs and industries.

Running parallel with this new interpretation of the Commerce clause, another doctrine, at first vaguely stated, is now taking definite form. It is that congress has the power without any constitutional restraint and in disregard of the historic concept that the federal government is one of enumerated and limited powers, to legislate on, and regulate, any and every matter affecting our way of living, if done with the declared purpose of promoting the general welfare. It may be recalled, as a matter of historic interest, that when in 1934 the German Reichstag voted to suspend the Weimar constitution, and to vest the powers of the state in the Chancellor, it was done with the declared purpose of promoting the general welfare.

As a necessary consequence of this new trend in judicial interpretation, the power and jurisdiction of the states in relation to their internal affairs are being whittled away to the vanishing point. The states are gradually being reduced to the status of geographical designations, and their constitutional and historic powers are being absorbed by the federal government. I am not at this point discussing whether this new trend is necessary or desirable. I am merely stating the fact.

Up to 1937 it had been quite uniformly held throughout the entire history of this country that agricultural production, manufacturing, mining, and their related activities, were not interstate commerce and were subject to state regulation. The same line of cases held that commodities were not in interstate commerce until they had begun their interstate journey. It had also been uniformly held that congress could not, under the Commerce clause, or upon any other constitutional ground, deny interstate transportation facilities to commodities produced in a state useful in themselves and not harmful to the public health and morals. All these decisions have been brushed aside. Congress may now, so the supreme court has said, deny any commodity produced in any state access to interstate or foreign markets for any reason, or indeed for no reason at all. The power to exclude any goods originating in any state from interstate and foreign commerce has been declared to be unlimited. Thus, it will be seen that each state now at the will of the federal government, may be compelled to become an isolated, self-contained, economic unit, cut off from any commerce with other states or foreign nations unless it yields control and regulation of its industries to the federal government and produces commodities in strict compliance with the laws and regulations laid down by it.

The decision in *Wickard v. Filburn*, (317 U.S. Rep. 111) arising under the Agricultural Adjustment Act of 1938, as Amended in 1941, decided by the supreme court of the United States in 1942, and the decision in *United States v. Wrightwood Dairy* (315 U.S. Rep. 110), arising under the Agricultural Marketing Act of 1937, and decided in 1942 by the same court, in effect hold that under the Commerce Clause the federal government may fix the quantity of any agricultural product a farmer may produce, fix the prices at which he may sell his products, prescribe conditions with respect to hours and wages, the types of crops or commodities he may grow, the use to which they may be put, and in fact control everything relating to the farmer's economic life.

The *Kirschbaum* case (316 U.S. 517) and the *Warren-Bradshaw Drilling Co.* case (317 U.S. 88), and other cases following the same line, held in substance that the federal government may, if it chooses to do so, control all employee and employer relations, industrial practices, and activities.

In determining what is interstate commerce, the court seems to have gone back to the old theory that if a pebble were thrown into the middle of the ocean, the resulting movement would extend to the utmost limits of the seven seas so any disturbance, however slight, at any point in our economic system might extend to the periphery. From these decisions, I epitomize the description of the chain of causation followed by the federal supreme court in determining what is interstate commerce. The language is mine. It illustrates the logic of the court.

Any disturbance, however slight or unimportant, of any part of the total structure of our intricate, complex, and delicately balanced system, may, by the centrifugal forces, be propelled outward to the peripheral boundaries and the repercussions of centripetal forces thus react upon all integrated parts.

A new doctrine with respect to waters within the states practically eliminates their jurisdiction, except in so far as it may be exercised by permission of the federal government. It would now seem that the waters of any stream are subject to federal control if any part, in the course of its meanderings through mountain gorges and valleys, might reach navigable waters.

There is no limit upon the power of the federal government to assess and collect income taxes. The same is true of estate and succession taxes upon estates of decedents. The trend in the federal income and estate tax laws is to take for the federal treasury more and more from these sources of revenue, leaving a constantly diminishing part for the state.

Many assert that this trend toward an enlarged and exclusive federal jurisdiction over all these subjects and activities is a necessary consequence of the complexity of our own economic problems and their relationship to world conditions. The trend toward centralized government and managed industry is manifest in other countries, and especially in Europe on the part of certain nations that heretofore have not been very sympathetic to that ideology.

If we continue to burden the federal and state treasuries with demands of this group and that; if we continue the many obstructions to free enterprise; if we continue to encourage the belief held by so many that they may thumb a free ride to a workless Utopia; if various groups can successfully exert political pressure to obtain grants and subsidies from public treasuries, our whole economic structure state and national may collapse.

If we are to have a planned and controlled economy, obviously there must be devised a method of dividing the national income by some mathematical formula or slide rule.

Under such a system, agriculture might not fare so well. Farmers are no longer the dominant political power in this country. They are greatly outnumbered by those who are not at least directly engaged in agricultural pursuits, and the latter group or groups have a paramount interest in cheap and abundant food. In any allocation of income under a controlled economy, the political power of nonagrarian groups is likely to outweigh the farmer. The farmer might find the floor protecting the income of other groups so high and his price ceilings so low that there may not be room for him to stand up.

We may be facing the question in which direction we choose to go. Shall we try to maintain, in substance, our historic American system, and perhaps retrace some of our steps away from it, or, upon the other hand, accept as inevitable some form of cooperative commonwealth, statism, or socialistic state, and adjust ourselves to such a system. We should make up our minds soon and quit fumbling. We cannot have both, and at the present time we do not have either. If we are to seek to maintain our American system, then let us go to work on that job. If we are to have wholly government planned, controlled and managed economy, let us make up our minds accordingly, turn the job over to federal bureaus, and quit talking and worrying.

But I do not concede that we have lost faith in our system, or that a majority of the American people have been converted to alien ideologies, or that we are in the grip of forces too strong to resist and which are driving us toward a socialistic state.

In the past, the American system has given a greater measure of liberty, opportunity, peace, order, material comfort, and spiritual, intellectual, and political liberty than any other system of which we have any record. I believe we can preserve it and dissolve the confusion, the apprehensions, and the emotional thinking of today by the catalysts of hard work, economy, and common sense. I think it is well worth trying.

THE SERVICES OF EDUCATION AND RESEARCH IN THE FIELD OF AGRICULTURE

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After three days of listening to outstanding leaders discuss factors affecting agriculture economy, it is natural that we consider what this institution proposes to do about some of these factors and what has been done in the past. Along the side of a Harvard gate is this inscription put there in 1642:

"This college is created to avoid passing on to posterity an illiterate ministry."

The field of ministry was evidently dominant at that time. Now the field of economics seems to be on top. This conference has been dedicated to marketing and distribution. Some may wonder why other social aspects were not given consideration. The time allotted did not permit fuller discussion.

of both social and economic problems; therefore, our attention has been devoted primarily to marketing and distribution. People not familiar with the field of marketing, distribution and production will often think there is a sharp cleavage between marketing and production. As a matter of fact, the more you work on problems of either, the more you realize there is no sharp line of demarkation.

Historically production was confined to local markets. However as our production increased, there was a need for national markets, and later, international markets. In order to find out what these markets demanded, it was necessary to determine the consumers' demands in these markets. This was done not only by trade, but also by various state and federal agencies. Producers and sellers needed to know what was wanted. . . where it was wanted . . . when it was wanted and how (i.e. form). These are fundamental questions which need to be answered before getting into production of any given commodity either industrial or agricultural. In the process of making these analyses, consumer wants and markets both national and international, it was found that various trade barriers such as freight rates, regulatory policies between states and between urban and suburban areas, tariffs, quotas both domestic and foreign, and financing were important in expanding markets. It was also found that we needed to know the steps the products go through before reaching final destination; that is, the warehousing, types of transportation, speed of transportation, processing and storage. Knowledge of these factors is essential if the producer is to market his products at the most advantageous prices.

One of the last acts performed by Lincoln made possible the establishment of land grant colleges and universities. These institutions were established to fill a need not being met by existing educational institutions.

The land grant colleges from their inception were set up to serve the economic needs of the people. In the earliest stages it was thought best to train a few young men and a few, but not many, young women in agriculture, mechanical arts, and subsequently in domestic sciences. The earlier training was predicated on the applications of pure science to the solution of practical problems. Excellent work was done in these fields; however, their findings were not readily available to the public. In fact, few thoughts were devoted to problems of the state. Subsequently, Agricultural Experiment Stations were set up in each state to carry on research and experimentations on the problems of agriculture, industry and of the home. However, the findings were still kept in the archives. Few people benefitted.

Today our land grant institutions are modern and have provisions for taking the findings of research and experimentation to the people. For example, here at Oregon State College the School of Agriculture is made up of three coordinate divisions:

- The Agricultural Experiment Station
- The Teaching Staff
- The Extension Service

While each of these divisions has its specific functions to perform, they are, of necessity, interdependent one upon the other.

The Experiment Station is charged with the responsibility of conducting basic research work and experimentation in all types of problems affecting agriculture. The teaching staff has the prime responsibility of teaching

our young people the fundamental sciences concerned with agriculture, together with the economic factors associated with the production and handling of agricultural commodities. The Extension Service, created by an Act of Congress in 1914, has the specific task of carrying to the farmers and rural people of the state scientific knowledge in the field of agriculture and home economics.

It can be noted from this brief outline of principal functions of the three coordinate divisions of the School of Agriculture, that the basic research and experimentation carried out by the Experiment Station workers forms the basis for much of the material used by the teaching staff in its educational activities with the students in the School of Agriculture. Their work, together with the research done in other states and by the U. S. Department of Agriculture and other workers, forms the basis for the educational activities of the Extension Service in the field of rural education.

I would like to briefly review at this time a few of the important accomplishments in the field of research which have a bearing upon the marketing of Oregon's crops.

1. Oregon is one of the major producing areas for winter pears. A number of years ago, considerable difficulty was experienced in the marketing of Oregon's winter pear crop. The Experiment Station conducted research work in a number of eastern cities to determine the various factors concerned in the consumer acceptance of winter pears. As a result of these experimentations, winter pears are now pre-conditioned; that is, ripened in central warehouses prior to being put on sale in the retail markets. Consequently the consumer is able to buy a pear which is ready for consumption at the time it is purchased.

2. Another important development brought about through research at the Experiment Station is expanding the market for Oregon's butter. Several years ago, butter was piling up in our cold storage plants. There appeared to be an unlimited demand for butter in our sister state to the south, yet they were hesitant to buy Oregon butter. This led to a research project which entailed a survey of the consumer markets in several California cities. This survey demonstrated that those cities demanded a higher quality butter than that being generally produced in Oregon. These findings necessitated the inauguration of a series of intensive research projects in the state which resulted in developing methods whereby the Oregon dairyman, in cooperation with the manufacturer, could improve the quality of his dairy products and therefore expand his market.

3. I should like to present one more example. Oregon is ideally suited to the growing of ornamental nursery stocks, and is particularly famous for its fine roses. Nurserymen were experiencing considerable difficulty, however, in marketing their rose stocks due to the fact that the leaves did not naturally defoliate; and therefore, when the stock was shipped, the leaves decomposed resulting in an unattractive appearance which invariably reduced the market price. Research carried out at the Experiment Station developed a practical method of defoliating the rose stock through the use of a simple gas. Today Oregon's rose stock commands a good price in nearly every market in the United States.

Other significant contributions to marketing processes are: the removal of spray residue from tree fruits, development of brining process for cherries, harvesting and scutching of fiber flax, testing and developing legume and grass seeds for eastern markets. These examples taken from the files of the Experiment Station are only illustrative of important work which has been done in the field of marketing Oregon's agricultural products. So much for the past.

Let us now see what is in store for the future research program of the Experiment Station.

During the past few years, the number of men who have been turned down as being physically unfit for military service has forcibly brought to the American public the need for better nutrition. The Experiment Station is undertaking comprehensive research studies in this field to determine the nutritive values, including the vitamin content, of various Oregon grown food crops. It is anticipated that these investigations will have considerable bearing on the future marketing and perhaps future production of certain food crops. Concurrent with these investigations, research in breeding will be carried out in an endeavor to build up and develop new varieties or strains of vegetables, fruits and cereal crops containing high nutritive values, especially vitamins. Intensive research will also be carried out in the field of food processing, particularly better methods applicable to the quick frozen food industry which has had such phenomenal growth in the past few years.

The aforementioned specific examples are used only as illustrations and do not by any means cover the field of activity in the Experiment Station. The Experiment Station staff is now in the process of adjusting its research project work toward investigations which will further enhance Oregon's agriculture in the world markets. In addition economic studies on prices, transportation, mainly freight rate structure, are going forward.

Let us consider the second division. . . the teaching phase of the School of Agriculture. For the past eighteen months, staff committees in the School of Agriculture have been giving much study to the revision of our curricula. The work of these committees in many cases will result in new courses geared to meet the changing conditions in our economy and the dropping of obsolete courses. We expect the effect to be a better educational program for our young people who will be the leaders of tomorrow. Solution of our agricultural problems depends primarily upon the education of young people interested in agricultural pursuits in such a way that they will have the basic knowledge of the numerous factors affecting the agricultural economy.

Let us review briefly some of the activities of the Extension Service. As indicated previously, the research results obtained through the Experiment Station worker are carried to the rural people principally through the extension worker. A number of specialists are employed in the central staff each of whom is closely associated with the department of the Experiment Station charged with the responsibility of carrying out experimental work in the fields of farm crops, horticulture, poultry, dairy, economics, agricultural engineering and animal husbandry. Because each man is directly connected with the Experiment Station work and worker, it is not necessary for him to wait until the results are published. He can make available to the farm people, through the local county agricultural agent staff, the developments which are applicable to the agricultural production in any given area of the state.

Oregon Extension Service was one of the first in the nation to employ a specialist in marketing. It is the task of this specialist to work with all groups in the marketing and handling of agricultural commodities. In cooperation with specialists in other commodity fields, farmers are kept currently informed as to the market demands for various agricultural commodities. Through the activity of the Extension Service, commodity associations have been organized for most of our major agricultural groups. These organizations serve

as a spearhead for study and analysis of major problems affecting the particular group, and make the necessary adjustments in their production to meet consumer demand.

The Extension Service maintains a market news service which, in cooperation with the federal and state agencies, is responsible for the daily assembling and dissemination of market news on major agricultural products. This group in cooperation with other federal agencies, particularly the Bureau of Agricultural Economics, also maintains current statistics, not only in the production of Oregon's agricultural crops, but for the nation as well. Further adjustments are now being made in the Extension Service program.

In 15 Oregon counties agricultural planning conferences are now in progress. At these conferences the farmers and extension specialists are exploring problems facing the county's agriculture, and developing specific recommendations regarding the solution of these problems. A basic consideration underlying most of these recommendations is market prospects and outlets as a guide to adjusting the widely diversified production possible in most of Oregon's 36 counties. The conference reports will be the basis for making such adjustments as are necessary in the Extension and Experiment Station program. During the winter of 1946-47, similar planning conferences will be held in the remaining counties of the state.

Steps are now underway to improve and enlarge the marketing news and agricultural outlook services. The fundamental factors affecting the agricultural economy which have been brought out so ably by the speakers at this conference will be of material assistance and the basis for developing a wider understanding of fundamentals in the staffs of the various county agents' offices.

The School of Agriculture will continue to pay attention to products and markets both domestic and foreign. We will keep in direct touch with the developments of economic, social and political conditions abroad affecting the marketing of our products, interpret these developments and pass the results on to the people of this state. We will study consumers' demands more closely and directly. In the past it has not always been possible to get information from the ultimate consumer and ascertain his likes and needs. Most of our work is with the industries themselves and as a mutual undertaking. We will continue to work with rural people, our farm population, in helping them understand the fundamental facts brought out in this conference and the fundamental facts affecting world trade. If we succeed in that, we believe that we will have fulfilled a very useful mission.

On behalf of the staff of Oregon State College, I certainly want to express appreciation for the speakers who have prepared papers and to the audience, some of whom have come great distances. I hope you have benefited as much as we have at this conference.