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## A PROGRAM FOR AGRICULTURAL DEVELOPMENT<sup>1</sup>

### CONTENTS

<i>The American Association for the Advancement of Science:</i>	
<i>A Program for Agricultural Development:</i> DR. R. W. THATCHER .....	149
<i>Should we have Faculties of Public Health?</i> DR. H. W. HILL .....	153
<i>Scientific Events:</i>	
<i>The Ecuador-Colombia Earthquake; Agriculture in the Tropics; Data for the International Critical Tables; The Martin Johnson African Corporation; Eminent American Chemists</i> .....	156
<i>Scientific Notes and News</i> .....	158
<i>University and Educational Notes</i> .....	162
<i>Discussion and Correspondence:</i>	
<i>The Terms Anode and Cathode:</i> DR. JAMES F. COUCH. <i>The Synchronous Flashing of Fireflies:</i> PROFESSOR EDWARD S. MORSE. <i>The Problem of the Monkey and the Weight:</i> DR. CARL HERING. <i>The Professor and his Wages:</i> ANON. <i>Corrections:</i> PROFESSOR NEIL E. GORDON, PROFESSOR F. CAJORI. ....	163
<i>Scientific Books:</i>	
<i>The Weber Seventy-year Book:</i> DR. DAVID STARR JORDAN. <i>Mendel on Nutrition:</i> PROFESSOR E. V. MCCOLLUM .....	164
<i>Laboratory Apparatus and Methods:</i>	
<i>A Conventional Scheme for Teaching Cell Division:</i> PROFESSOR Z. P. METCALF .....	165
<i>Special Articles:</i>	
<i>Oscillations in the Low Voltage Helium Arc:</i> CARL H. ECKART and PROFESSOR K. T. COMPTON. <i>On Walden-Inversion:</i> DR. P. A. LEVENE and L. A. MIKESKA. <i>The Relation of Climatic Conditions to the Salt-proportion Requirements of Plants in Solution Cultures:</i> PROFESSORS SAM F. TRELEASE and BURTON E. LIVINGSTON .....	166
<i>The American Psychological Association:</i> PROFESSOR FRANK N. FREEMAN .....	172
<i>Science News</i> .....	x

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I AM quite conscious that the announcement of the topic for this address may lead to a feeling that it is one which has already been overdiscussed. As Mark Twain said about the weather, "Everybody talks about it, but nobody seems to do anything about it." The choice of a topic for such an address as this is not an easy task. But since the annual meeting of the Association for the Advancement of Science has come to be a sort of milestone to mark the contributions of science to the general public welfare, it seems to me that it would be appropriate to discuss briefly some of the contributions which economic science is making to the problems of agriculture in its relation to public welfare in these days when so much public attention is being given to these matters.

In this country, where public policies are so largely dependent upon and determined by public opinion, a wise program for the development of agriculture as a most important element in the public welfare of the country is most desirable under all conditions, and in periods of depression and economic stress, it is of greatest importance that there be such a wise program, because at such times many irrational or unwise proposals for the amelioration of agricultural conditions are made. These latter may be either based upon an inadequate knowledge of the real needs of agriculture or of the economic laws which govern the development of any industry, or they may be prompted by selfish desires to take personal or political advantage of the unrest and discontent caused by the temporary adverse conditions.

Such a program must be based upon a recognition of the interrelations and interdependence of agriculture and industry. Industry has more to gain and more to lose from a successful or an unsuccessful agriculture than do the farmers themselves in all those states where industry and agriculture are competing for labor and for food and raw products. Director Haskell, in his presidential address before the American Society of Agronomy<sup>2</sup> in Chicago last month, pointed out that through the introduction of improved methods of operation, during the two decades from

<sup>1</sup> Address of the vice-president and chairman of Section O—Agriculture—American Association for the Advancement of Science, Cincinnati, December, 1923.

<sup>2</sup> *Jour. Am. Soc. Agron.*, Vol. 15, No. 12, pp. 473-481. (December, 1923).

1900 to 1920, agriculture was able to release to the industry and commerce of the country over 4,000,000 men, and this without causing any loss but rather a slight gain in the total tonnage production of food and fiber crops in the farms of the country. Further, with a decrease in twenty years in the cultivated acreage of 11 per cent. and of the proportion of our working population which is engaged in farming of over 33 per cent., our farmers have fed and clothed our rapidly growing urban and city population, and in war time have contributed enormously to the needs of the old world countries for these products. While this is a matter for congratulation in many ways, it has its sinister side so far as the present and immediate future condition of agriculture is concerned. Labor moves from place to place and from occupation to occupation in response to the opportunities and returns which are offered to it. What does it mean, then, that 4,000,000 workers transferred from agriculture to other occupations during the twenty years when conditions were the most favorable to agricultural development that the country has seen in the last century? There seems to be no other alternative conclusion than that they went to better their conditions. Hence, if agriculture has benefited by all the scientific work which has been done in its behalf during these years, it would seem that industry and commerce have benefited still more.

Again, such a program must be based upon sound economic principles rather than upon temporary political expedients. There are economic laws which govern the cost of production of farm products, the proper method of their distribution, the financing of farm operations, the consumption of food and fiber, and their ultimate price to the consumer, in just as definite and sure a way as do the physical laws of the universe govern the climate, the soil, the growth of plants and animals and all the other physical phenomena of farm operations. It is as futile to attempt to overthrow these economic laws by legal enactments as it would be to attempt to change the seasons by edict, or to stop the oncoming tide of the ocean by the waving of an imperial scepter. It appears that the present political practise of increasing the cost to the farmer of nearly everything which he has to buy by tariffs on the industrial products which he must use, by guaranteed incomes to transportation agencies which carry his products to market, and by shortened hours of labor at increased wages for the producers of his fuel, etc., has led many otherwise sane and sound farmers to believe that the way out of the present unfair situation is to erect similar artificial barriers about the distribution and sale of his products. Nothing can be more certain, however, than that permanent improvement in conditions can come

about only through procedures which are in accord with definite economic laws.

Finally, such a program ought to be national in scope. Artificial geographical boundary lines between political units of government have no effect upon the economic laws which govern agricultural or industrial welfare; and state laws, policies or programs do not adequately meet agricultural or industrial requirements in a broad and comprehensive way.

The program must recognize that agricultural and industrial progress is made up of alternate periods of prosperity and depression; that during each of these periods there are certain economic laws the results of which are inevitable, of which a wise program or policy will take cognizance and to which it will be so adjusted that the more intelligent individual farmers shall be able to continue in the business with satisfaction to themselves and comfort for their families. From 1896 to 1920 America was in a period of increasing prices. To the ordinary income of every worker there was annually being added an extra amount which was not the direct result of his own effort, but the added effect of the rising scale of prices for everything. This movement was tremendously accelerated by the war period from 1914 to 1919 and reached its peak in 1920. Since that time we are going through the familiar and distressing effects of deflation. While there are unquestionably irregularities in the process of deflation which are causing unfair and injurious effects upon some branches of agriculture, which may possibly be amenable to legislative correction, the major course and chief results of the process are inevitable and the wise program for agricultural development must be adjusted to them.

A permanent program must, therefore, provide for alternate adjustments to periods of expansion and of retraction, of prosperity and of depression, and of rising and of falling prices. It would scarcely be appropriate to devote much time in this address to the nature of the problems which are to be met during periods of agricultural prosperity and expansion. The history of the twenty-five years immediately preceding the present depression shows how adequately American agriculture is organized to meet the needs of a growing population and increased demands for its products. The steady improvement of agricultural practises during the pre-war period, whereby a constantly decreasing farm population was able to satisfactorily feed and clothe the increasing industrial and city population, and the wonderful response of American agriculture to the wartime demands upon it are ample evidence of the adequacy of our program in periods of prosperity. Further, far-sighted men are ready with plans for better utilization of the western plains for meat production; of the cut-over

lands of the north for dairy production, and those of the south for feed and fiber production; for the reclamation of swamps for vegetable production; and for irrigation of arid lands for the production of fruit and forage; as soon as the need for expansion of agricultural production again arises. The discussion of these plans at recent meetings of agricultural college workers shows that leaders in these fields are well abreast of the times and as ready to meet emergency needs for increased production in the future as they have proved themselves to be in the past.

Nor is it necessary to discuss at length here the measures which might be taken by national or state governments or by organized groups of farmers to meet the necessities of periods of agricultural depression like the present. The wide-spread discussion in the public press is rapidly sorting out the various proposals which have been made for the improvement of the present unsatisfactory condition into those which have an adequate foundation in sound economic principles and those which are temporary political expedients of doubtful value even to those special groups of farmers whose troubles they are intended to alleviate. It is possible, of course, that some type of legislation can be devised which will give to agriculture the same sort of artificial help that the tariff gives to some forms of industry; that the guaranteed income feature of railroad rate legislation gives to transportation agencies; and that the proposed ship subsidy might give to a merchant marine. It is conceivable also that some form of organization of farmers might be devised and given legal sanction which would give to producers of food the same moral force in pushing their claims for increased wages for their work that the miners' unions and other similar organizations now possess. But these forms of remedial measures are only temporary expedients and of as doubtful utility in a permanent program for agricultural welfare as they are for the permanent welfare of the agencies which are now apparently profiting by them.

On the other hand, there are undoubtedly improvements to be made in the methods of distribution of farm products which will be to the ultimate advantage of both the producer and the consumer of these products. Undoubtedly, freight rates need adjustment in order to equalize transportation costs on agricultural products with those of the products of other industries. The present immigration restrictions which cut off a desirable labor supply for American farms certainly need modification; this would benefit both agriculture and industry. But while these matters of general moment to the agricultural group as a whole are important and are fully entitled to receive all the public attention which is being given to them,

it is not my purpose to discuss these features of the agricultural program in this address. It has been my purpose to consider instead certain other matters which are not now such generally popular topics for public discussion, but which, on the other hand, may be put into actual practise by individual farmers without waiting for legislative action or for elaborate organization undertakings. It is fortunate that there are these other clear and definite ways in which individual farmers can, through their own efforts, improve their economic conditions, even in periods like the present.

It is to these possibilities for individual adjustment of the farmer's own operations, which are not now receiving as large attention in our general agricultural program as their importance justifies, that I wish to devote the remainder of this address. I am prompted to do this because of my belief that it is both the greatest advantage and the largest opportunity of farming that it is so largely within the power of the individual who follows this vocation to determine how he will meet its problems and the degree of success which he will attain in it. No labor union can ever standardize or bring to a dead level the skill, energy and efficiency of farmers. In this vocation there will always be opportunity for increased reward for increased intelligence, diligence and skill exhibited by any individual farmer.

I have already intimated that there are definite economic laws of cause and effect which, when properly recognized, may be utilized by each individual farmer in adjusting his practises to meet the changing economic situations with which he is confronted from time to time. The great difficulty which most of us have in discovering these laws is due to the fact that we fail to recognize that effects nearly always lag behind their causes in point of time. It takes time for economic forces and conditions to produce their effects, just as is the case with the physical forces and conditions with which we are surrounded. By experience, we have become accustomed to this fact in our physical surroundings and without thought or conscious care we adjust ourselves and our plans to it. As a homely example, I might cite the fact that, as I am writing this paper, the sun in his annual journey southward (as we popularly express the effect of the changing inclination of the earth's axis toward the sun in the course of the changing seasons of the year) has reached his lowest point in our southern horizon. The well-known effect of this phenomenon is to produce winter weather in the northern hemisphere. But do we Northerners expect and plan for our maximum winter conditions on December 21st? Not at all. Experience has taught us that the lag in the effect of the shortened daily period of sunshine and of the slanting

rays of the low-lying sun will exhibit its maximum effect several weeks later. So it is with all physical, social and economic cause and effect relationships. To understand and utilize such relationships we must be able to trace them correctly and to adjust our plans and operations to their inevitable operations.

The inevitable deflation of the post-war period has led to its inevitable result in a period of generally falling prices. To be sure, prices for some types of commodities have fallen more rapidly and to further depths than those of other materials. This is because of certain secondary causes which need to be carefully studied and analyzed so that their effects may be more equitably adjusted. But in the main, since the reconstruction of the post-war period is not yet fully accomplished and since world markets are not yet fully opened and world production and consumption not yet fully restored to normal conditions of steady growth, we are still in the period of general falling of price levels and the lagging effect of the principal causes for this economic situation is likely to continue for some time to come, although there are hopeful indications that the world's economic season is changing and that the warming sun of industrial prosperity is already entering upon his upward journey.

Now, these varying conditions offer to the intelligent student of them a most excellent opportunity to capitalize his superior knowledge and to profit by a better adjustment of his practises to these inevitable cause-and-effect conditions than his less intelligent competitor in the farming business can make. It is for this reason that I have felt it wise to stress in this address the possibilities and importance of individual adjustment of farming operations rather than the group adjustments which are looming up larger in public discussions just now. The following statements are, of course, not a complete presentation of the economic situation with which the individual farmer is confronted, nor anything like a complete outline of the various adjustments which he might make in his operations with advantage and profit. They are only a very brief summary of some of the more important and outstanding phases of the situation and possibilities of advantageous adjustments of the farmer's business management and operations to it.

Some of the inevitable economic effects of a period of falling prices upon the various factors of farming operations may be summarized as follows:

- (1) Labor costs and taxes decline less rapidly than prices for products which the farmer has to sell; hence are relatively high.
- (2) Discharge of indebtedness lags, payments of principal and interest on debts is difficult.

- (3) Transportation costs and costs of retailing commodities decline more slowly than do prices.
- (4) Market fluctuations are unusually large.
- (5) Demand for luxuries is sometimes excellent, but generally intermittent.
- (6) Products originating far from points of consumption are affected most adversely by marketing conditions.
- (7) Bulky and perishable products are most affected by transportation and financing costs.

A wise program of adjustment of individual farm operations to these inevitable economic laws will include as many as possible of the following factors.

- (1) Farmers should produce a larger proportion of the food products used by their own families, to avoid excessive distribution and financing cost.
- (2) Retailing costs should be diminished both by more direct selling and by less wide distribution of products.
- (3) Advantage should be taken of selling to deficit centers or of deficit crops.
- (4) Labor costs should be reduced by the use of labor-saving machinery and by the postponement of labor-consuming improvements which yield their returns only over long-time periods, such as tile drainage, land clearing, etc.
- (5) Acreages of less productive lands should be reduced, by changing cultivated fields to pasturage, or by temporarily abandoning least productive fields.
- (6) Size of farms should be adjusted to a reduced supply of farm labor. Expansion in size of farms should be avoided. Large farms, requiring expensive transient labor, are not efficient in periods of depression.
- (7) Acreages of high quality hays, especially legumes, should be increased, in order to provide cheap and efficient livestock feeds without transportation costs.
- (8) The farmer's labor income should be supplemented by working for wages at outside work, especially near large cities.

It will at once be apparent that many of these adjustments are easiest made in those sections of the country where agriculture and industry flourish side by side; where market centers and production centers are near together. This emphasizes a principle in national policy which, while it is of importance from the standpoint of successful agriculture, is of even greater importance from the standpoint of national solidarity and prosperity. While it is a little foreign to the purpose of this address, I venture to digress far enough to say that in my judgment one of the greatest menaces to the future of our united country is the growth of sectionalism of feeling because of the geographical segregation of industries and vocations of our people.

The concentration of industries and commerce along the Atlantic seaboard and of agriculture in the Mississippi Valley and western states has already proceeded to a point where some of its baleful influences in the development of sectional feeling and prejudices are beginning to become apparent. One can not read the newspapers of the different parts of the country or discuss public matters with the residents of different sections through which he may travel without being struck with the almost complete lack of understanding and sympathy of the residents of one part of the country with the problems and views of those of other localities. Students of history can not help but note the similarity of the public controversies and lack of general sympathetic understanding of the people of the different sections of the country to the conditions which preceded our Civil war. Whatever we may think of the necessity for and glory of the other wars in which this country has participated, we can not think of the bloody Civil war between brother Americans as anything but a horrible blot upon our fair history and an event which set back the development of the southern parts of our country for a half a century.

To contemplate the possibility of sectional development of interests and prejudices to the point of another Civil war is unthinkable. Yet there are sinister possibilities in the present situation. It is clear that not only would a successful agriculture be promoted by bringing the food-producing and food-consuming populations nearer together in physical habitation and working environment; but that the intermingling of mental and social environment of workers in different vocations is a factor of solidarity and union in national life whose importance ought not to be overlooked at times such as these.

It is for these reasons that I have ventured to digress from the main thesis of this address to suggest that a national program for agricultural development should include in it a constant effort to keep both agriculture and industry and commerce as widely distributed and as closely intermingled one with the other as it is physically and economically possible to do. Such a plan will not only facilitate adjustments of labor, transportation difficulties, market distribution problems and all the other economic phases of our national welfare; but will also tend to avoid the growth of sectional differences and strifes such as are the most threatening specters of all free governments. I therefore close with a fervent repetition of the old-time New Year's prayer, "May peace prevail, and prosperity attend our ways as a united people."

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## SHOULD WE HAVE FACULTIES OF PUBLIC HEALTH?

Is public health a subject of enough individuality and importance to warrant its establishment as a faculty of a university? This is, in substance, the question asked by those who have the matter of advanced public health education brought to their attention for the first time. In the University of Western Ontario this question was answered in the affirmative nine years ago. The existence of a faculty of public health here (the only *faculty* of public health in America and probably in the world) is a situation so unusual that an explanation is often requested. Here is a case when an explanation constitutes a defense; and should produce conviction, leading to the establishment of similar faculties in all institutions devoted to higher education.

The questions involved are these: First, at what stage in its own development and in the development of its relationships should a given subject of human thought be recognized by separation as a faculty rather than as a department or sub-department of some other faculty? And, second, is public health now at such a stage? The answers, both in the affirmative, require some elucidation of what public health is and what its relations to higher education are.

To begin at the beginning, education, the great aim of the university, has been very variously defined, but its ultimate object is to make men not only to *feel* at home in the universe, but also to *be*, in fact, at home here. Education, since it relates to man, necessarily has the two phases, sensory and motor, which all things coming into relation with man necessarily present. The sensory phase of education is that which results in reproducing in the mind as complete a picture of the universe as possible—a working model, if you like, preferably in three—or four!—dimensions. The more nearly this ideal picture or working model within the mind corresponds with the true universe without, the more complete is the sensory education, the more *well-in-formed* is the student. The motor phase of education is that which induces the sensorially well-informed mind to study, to change, to improve, to make more perfect and more extensive the *relationships* of man to the universe. But the process of educating the individual does not consist, as, alas, it is often assumed to do, in giving first a complete sensory education leading to a B.A., and then a motor education in postgraduate courses! Such a sequence in education is a cramp upon the human race. Sensory and motor education should be reciprocal, not sequential; and should be reciprocal,