SCIENCE

Vol. 101

FRIDAY, APRIL 13, 1945

No. 2624

Full Employment After the War: How to Achieve it and Maintain it: DR. JOSEPH MAYER	367
Obituary: Recent Deaths	
Scientific Events: The Royal Society; Affiliation of the Shell Develop- ment Research Club with the Society of the Sigma Xi; The National Foundation for Infantile Paraly- sis; The Passano Foundation Award	372
Scientific Notes and News	374
Discussion: Trypsin and Chymotrypsin versus Heparin: DR. M. K. HORWITT. Plasmodium Vivax Chesson Strain: DR. FREDERICK C. EHRMAN, DR. JOHN M. ELLIS and DR. MARTIN D. YOUNG. Reaction of Vitamin A with Super-Filtrol: DR. H. R. KREIDER. Biological Research and Publication: PROFESSOR T. D. A. COCKERELL	376
Scientific Books:	
Elliptic Functions: PROFESSOR PHILIP FRANKLIN. Industrial Psychology: DR. PAUL S. ACHILLES	378
Reports:	
Sponsors of World Exploration: G. R. CRONE	379
Special Articles: Recovery of Equine Encephalomyelitis Virus (Western Type) from Chicken Mites: DR. S. ED- WARD SULKIN. The Antibacterial Properties of Dicumarol: DR. ANDRES GOTH. The Mechanism of Growth Inhibition by Hexenolactone: DR. THEO- DORE HAUSCHKA, DR. GERRIT TOENNIES and DR. ANSEL P. SWAIN. Hydrolysis of Choline Esters by Liver: DR. CHARLES H. SAWYER. A Catalytic Effect of Thiamine at the Dropping Mercury Elec- trode: ALBERT WOLLENBERGER. The Nutritive	·
Value of Fusaria: LEONARD J. VINSON, PROFESSOR	

LEOPOLD R. CERECEDO, ROBERT P. MULL and PRO- FESSOR F. F. NORD. Podoptera, a Homoeotic Mu- tant of Drosophila and the Origin of the Insect Wing: PROFESSOR RICHARD B. GOLDSCHMIDT	381
Scientific Apparatus and Laboratory Methods:	
A Suggested Sterility Test for Penicillin: DR. ROBERT D. MUIE and DR. GEORGE VALLEY. A Sim-	
ple Device for the Addition or Removal of Solu-	
tions or Gases to a Closed System: JOSEPHINE	
BECKWITH SENN. Rapid Staining Method for Re-	
lapsing Fever Spirochetes: PFC. CHARLES L. WISSE-	
MAN, JR.	390
Science News	12
	14

SCIENCE: A Weekly Journal, since 1900 the official organ of the American Association for the Advancement of Science. Published by the American Association for the Advancement of Science every Friday at Lancaster, Pennsylvania.

Editors: JOSEPHINE OWEN CATTELL and JAQUES CATTELL.

Policy Committee: MALCOLM H. SOULE, ROGER ADAMS and WALTER R. MILES.

Advertising Manager: THEO. J. CHRISTENSEN.

Communications relative to articles offered for publication should be addressed to Editors of Science, 34 Gramercy Park, New York 3, N. Y. Communications relative to advertising should be addressed to THEO. CHRISTENSEN, Advertising Manager, Smithsonian Institution Building, Washington 25, D. C. Communications relative to membership in the Association and to all matters of business of the Association should be addressed to the Permanent Secretary, A.A.S., Smithsonian Institution Building, Washington 25, D. C.

Annual subscription, \$6.00

Single copies, 15 cents

FULL EMPLOYMENT AFTER THE WAR: HOW TO ACHIEVE IT AND MAINTAIN IT

By Dr. JOSEPH MAYER

BROOKINGS INSTITUTION, WASHINGTON, D. C.

INTRODUCTORY

On September 10, the first comprehensive official statement on postwar reemployment appeared in the public press in a report made by War Mobilization Director Byrnes. This statement gives even more point to the proposals offered in the following pages, in that the major unemployment problems soon to confront the nation seemed to be given short shrift. Director Byrnes asserted that only the "fears of timid people" stand in the way of continued employment at the present high levels and that "the present national income" should be maintained.

¹ Address of the retiring vice-president and chairman of Section L of the American Association for the Advancement of Science (1943). The views expressed in this address are those of the author and do not necessarily represent the views of his institution.

At about the same time the public was advised that one million soldiers and four million war workers will lose their jobs soon after X-day, the day the Nazis are defeated. Putting millions of breadwinners back to work in peacetime occupations on short notice will be no mean job.

Furthermore, our present war-level national income of 160 billions can not be maintained after the war without an enormous monetary inflation which nobody wants. Going back to the 40-hour week and returning millions of youngsters, housewives and oldsters to school, housework and retirement will of themselves reduce the present national income very considerably. The proper postwar employment and income outlook should not be in terms of wartime over-employment and consequent over-production, but in terms of what may be regarded as normal under high peactime levels.

High-level or "full" employment—a new objective which the American people insist on achieving and maintaining after the present war—presents two main aspects. One has to do with the immediate employment problems of demobilization of armed forces and reconversion of war industries. The other, no less important, has to do with what lies beyond the transition from war to peace, with problems surrounding the reasonable maintenance of high-level postwar employment once that has been achieved. The sevenpoint program herein proposed covers both these aspects.

RECONVERSION AND DEMOBILIZATION

First: It is proposed that the nation adopt a coordinated employment plan through the establishment of a Reconstruction Employment Commission. This proposal does not refer to committees of Congress or to an executive board or to a voluntary agency, no matter how active or well-intentioned. It is urged rather:

(a) That proper implementation and powers be provided through Congressional action after which the commission be set up by the President.

(b) That the enabling legislation definitely arrange for the non-partisan representation and the active participation of business, labor, agriculture and the public.

(c) That, to begin with, the commission study and report to the President, Congress and the people on various plans under way to achieve and maintain postwar employment.

(d) That from time to time the commission and its various official representatives make recommendations for the more effective carrying out of such plans.

(e) That, for the execution of the commission's own plans, existing government and private agencies be relied upon for the most part except as new agencies become clearly necessary.

(f) That the commission as such cease to function a year after the close of the war in Europe and in Asia.

There are a number of reasons why coordinated planning for postwar employment has come to be regarded as necessary by the great majority of our people. What happened after the last war is still keenly remembered. The feeling is that the mass unemployment of the early twenties and especially of the thirties must not occur again. Coupled with this feeling is the realization that present difficulties are of a much greater magnitude than during the last war. More extensive employment dislocations than ever before in our history have already occurred. Sooner or later millions of members of the armed forces and employees of war industries and government agencies will need to be shifted to peacetime employment. Specifications of the new jobs and of the skills of the millions to be shifted should be ready. It is generally understood that private industry can not do that job alone. At the same time, existing war agencies should not be relied upon too heavily. Their focus must continue to be on winning the war. Under these circumstances, all important groups in the United States approve of business, labor, agriculture and government acting together. With such joint effort, rich and poor, Democrats and Republicans, all have faith that the task of providing the necessary postwar jobs can be accomplished. At least, current polls of public opinion indicate as much.

To carry out this task, some such official agency as here proposed is urgently needed. It should be carefully organized. The number of representatives. manner of appointment, terms of office, etc., should be clearly set forth. An adequate staff and proper liaison with government departments and agencies should be provided. The methods of reporting to the people should be particularly stressed, such as brief popular statements, radio talks, and the like, to the end that an informed and alert public opinion may be counted on to support the commission's efforts in accordance with sound democratic principles. Above all, the powers granted the commission should be adequate to the task of providing a democratic framework within which American government and private enterprise may cooperate most effectively to maintain high-level employment in postwar years.

Second: It is proposed that the Reconstruction Employment Commission be set up at once, and, since reconversion has already begun, that it undertake among its first jobs a study of and report on ways and means of effectively handling two immediate problems. One, the re-employment of war workers thrown out of jobs as industry accelerates its reconversion from war to peace; the other, the temporary maintenance, through unemployment insurance and otherwise, of those who remain for a time without work. Much is heard these days about proper legislative provisions to cover temporary maintenance, but the more important problem of re-employment of war workers has hardly been touched in existing or contemplated legislation.

Important reconversion employment problems surrounding the termination of war contracts, the disposition and transformation of war plants, and like problems, are by no means solved with the turning over of such activities to war agencies. In fact, the huge problem of speedily and efficiently finding new ,jobs for many millions of displaced war workers is not thus being solved at all.

It has taken at least two years to mobilize our

economy for war, and that undertaking is still in process. War Mobilization Director Byrnes must continue to keep his eyes focused on war mobilization. Manpower Commissioner McNutt must continue to be concerned primarily with providing manpower for the needs of war. Neither official can consistently look in two directions at once. The more immediate need-to win the war-will necessarily have precedence and postwar needs will continue to be neglected unless some special agency has the sole responsibility for looking after them. Furthermore, it is anticipated that the Nazis will be defeated in a few short months. When that time comes, reconversion activities will hit the nation like an avalanche, even though we continue to fight a major war in the Pacific. If it took two years to mobilize for war, it is not too soon now to start mobilizing for the unprecedented peacetime re-employment needs that lie immediately ahead, some of them already at our very doorstep.

Third: It is proposed that the Reconstruction Employment Commission investigate and report immediately on the adequacy of existing arrangements for getting the armed forces postwar jobs. In this connection the commission should make legislative recommendation as to any additional facilities deemed necessary to fit the returning service men quickly into former jobs or into other jobs, and it should render a clear report to the nation in the interests of public information and of securing wholehearted support for effective procedures.

With the defeat of the Nazis, not only will reconversion of industry become greatly accelerated, but it will then also be possible for a substantial number of service men and women to come back home.

Responsibility for demobilization of the armed forces at the point of providing peacetime jobs now rests primarily with Selective Service and local draft boards operating in reverse. In addition, important assistance will be rendered by the Veterans' Administration, the U. S. Employment Service and various cooperating private committees and agencies.

The nation's facilities for handling these problems may already be adequate. But the public is not yet satisfied. It is asking: Will unpaid draft boards by and large really operate in reverse when the demobilization task takes on sizable proportions? Will they actually be able to take the major responsibility for providing jobs in addition to carrying on their present activities, which the public has just been advised are to continue virtually unabated? People are favoring the U. S. Employment Service or an entirely new set-up, an independent government agency with branches in every important community and power to force companies to make notification of job openings. . . . It is in the light of such general uncertainty, as well as of the urgency of the problems involved, that it is recommended that the Reconstruction Employment Commission make a report to the nation as soon as possible on existing demobilization and reconversion re-employment facilities and on their adequacy.

FURTHER TRANSITION TO PEACE

Fourth: To assist the commission, it is proposed that, with the defeat of the Nazis, the new Administration and the new Congress make a clear public statement of postwar domestic policy. This statement should cover such questions as the following:

(a) The time of termination of wartime controls.

(b) Contemplated relations between the government and postwar private enterprise.

(c) Proposed governmental fiscal and related programs to assist in the maintenance of high-level peacetime employment and business confidence.

(d) The imperative need, as governmental wartime controls are more and more withdrawn, that the official representatives of labor, business and agriculture on the Reconstruction Employment Commission take upon themselves an increasing responsibility for cooperative and statesmanlike planning, to the end that high-level employment be maintained in the years that follow the peace.

There is much current debate on whether private enterprise or government should lead the way in the achievement and maintenance of postwar full employment. The critical necessity for joint planning between all important groups is widely appreciated. A do-nothing policy such as followed the last war will not be tolerated again. But there is divided opinion, according to recent opinion polls, as to who should play the leading role. A large number of people favor the government. About an equal number favor business and labor acting together. Some people fear the return of postwar unemployment. Others fear the rise of a dictatorial governmental bureaucracy and the suppression of personal liberty.

It is particularly important for clarity of thought and action on postwar problems that such fears be allayed, that wartime controls as such be removed soon after the fighting finally stops and that private enterprise and freedom for the individual be quickly restored as parts of our peacetime democratic way of life. Where this leaves us with regard to postwar high employment most people have apparently not yet figured out. The new Administration and the new Congress can assist materially with clear-cut statements of domestic policy bearing on postwar full employment.

Fifth: Regarding a clear-cut statement of Congressional and Administrative policy covering postwar relations between government and business, several broad suggestions are here offered:

(a) That a careful study be undertaken of the basic uncertainties which hold back private expenditure and particularly private capital expenditure and of the obstructions which hamper the assumption of risk.

(b) That definite efforts be made to prevent the development of a fear psychology and to encourage a feeling of confidence and national well-being.

(c) That existing anti-monopoly legislation be further implemented and that provision be made for its more vigorous enforcement and for the maintenance of effective competition.

(d) That incentives to American enterprise be provided for the achievement and maintenance of full employment, such as the assurance of stability and consistency in government policies regarding business, the simplification of regulatory measures, the development of government insurance or guarantees against cyclical hazards, the extension of public credit facilities and a better integration between government spending, taxing and regulatory policies.

(e) That measures be developed to encourage continued economic expansion in the United States both with respect to existing industries and with respect to new industries, such as the adoption of low-price policies by established industries and of special governmental financial measures and research laboratories to facilitate the development of new industries.

(f) That a direct frontal attack be made upon boom and depression forces by such measures as the following: government control of instalment purchasing by consumers as changing conditions require, the strengthening of Federal Reserve controls over banks and finance companies, arranging for the retirement of the public debt through the banking system in such a way that both inflation and deflation may be counteracted, the mitigation of cyclical fluctuations in the construction industry, the timing of public works expenditures in accordance with boom and depression tendencies, a provision that Federal budgetary expenditures be made flexible, so far as possible, in order to counteract cyclical movements.

Some years ago, in an address before this association which received rather wide publicity, the present speaker suggested that what American business needed as much as anything else was the development of an institutional framework to protect it from cave-man influences and to give it a truly professional status without restricting real freedom of enterprise. In a recent publication, he further developed the idea in these terms: "Prize fighting was once more predatory than it is to-day. Marquess of Queensbury rules have helped to make for a more equitable competition there. In a similar sense, cooperative action in setting the rules of the economic game lifts competition to a higher plane of freer and more equitable operation." (Social Science Principles, p. 263.) Government alone can not develop such rules. Nor can business men unaided by government. But a clear statement of policy along such lines as those suggested above should go a long way to remove uncertainty and provide the stimulus for the cooperative development of a better institutional framework through such an agency as the proposed Reconstruction Employment Commission. On how satisfactorily this institutional framework is developed will depend to a very large extent whether or not high-level employment once achieved in the postwar world can long be maintained.

Sixth: With regard to governmental aid in maintaining postwar employment through carefully formulated fiscal and related policies, the following recommendations are made:

(a) That over-all federal, state and local taxes be calculated to balance the budget on the basis of an agreed-upon level of national income at "full" employment after the war.

(b) That, within the agreed-upon framework of fiscal objectives and continuing to rely primarily on the progressive income tax, existing tax rates be lowered—this lowering of rates to apply particularly to business taxes for the purpose of encouraging the use of venture capital and the development of new industries, also to other taxes for the purpose of stimulating and maintaining high-level consumption.

(c) That the postwar tax rates thus set be maintained without material change for a reasonable length of time, with the expectation that when revisions do occur they will be downward rather than upward.

(d) That the deficit financing and the public works which may become necessary, because of a temporary falling off in private employment and national income distributed through private sources, be looked upon mainly as makeshift measures—this on the assumption that positive action as here contemplated is being taken to maintain postwar employment and income at high levels.

The technical questions here involved are already being given detailed attention by various private and official bodies. It is the main objectives which concern us in dealing with high postwar employment. If we assume that business and labor are in reality cooperating to maintain "full" employment, several desirable results may be looked for. Positive governmental action can be kept at a minimum; a fiscal program can be developed to give a lift to private industry when needed and to breed confidence rather than uncertainty; and tax revenues, though they may at times fall below the "break-even" point, will come to be looked upon as fixed to balance government outgo at high employment and, when business and income expand, as providing a surplus that can be used to reduce the national debt.

Seventh: With respect to the necessity for cooperative planning between labor and business (including agriculture) and the increasing responsibility which they must shoulder if postwar high employment and our democratic way of life are to be maintained, it is recommended:

(a) That, together with the government representatives on the proposed Reconstruction Employment Commission, the representatives of business and labor begin at once to lay the groundwork for later agreement on a fair and effective postwar relationship between wage rates and business profits on the one hand and between business costs and the early postwar price level on the other—in doing this they should take into account both agricultural and industrial costs and prices and the effects of the early postwar price level on international trade and the purchasing power of the fixed-income classes.

(\mathfrak{b}) That, by the time wartime controls are dropped following the close of the war, these representatives come to agreement and adopt a standstill or hold-theline program respecting wage rates, profit rates and ratios between agricultural and industrial prices in relation to the early postwar price level.

(c) That, with these rates and ratios held by agreement and with government standing by to assist, the succeeding postwar price level be allowed to fall as increased efficiency in production and distribution becomes more and more effective.

(d) That this passing on of efficiency gains to the ultimate purchaser of final products, through a lowering of prices while wage and profit rates are held fairly steady, be looked upon as one of the most important safeguards of high-level employment, expanding production and rising standards of living in our postwar life.

There are of course monetary and other measures, both public and private, that must not and will not be overlooked. Here we are focusing attention on the essentials only. Business, labor and even whole communities are already taking stock of postwar needs and opportunities. But the main difficulties, as outlined above, remain virtually untouched. Major interest groups must learn to work shoulder to shoulder in the most important and most difficult of untried economic ventures-the maintenance through the years of high-level peacetime employment. To this extent at least, public opinion seems overwhelmingly satisfied that government take the lead, that is, in the setting up of some kind of official body, possibly along the lines of the proposed Reconstruction Employment Commission, on which business, labor and agriculture will have proper representation and opportunity for effective collaboration and through which adequate

channels may be provided for carrying out the results of cooperative planning.

So much for the details of the seven-point program herein proposed.

A UNIQUE OPPORTUNITY AND A CRITICAL DANGER

If present expectations are fulfilled and the war in Europe terminates a year or more ahead of the war in the Pacific, a unique opportunity will be presented for coordinated democratic planning in the United States to achieve and maintain postwar full employment, whereas if the opportunity is not courageously seized our nation is in vital danger of losing the peace after winning the war.

People in a democracy accept war restrictions and sacrifices because in a life-and-death struggle there is no other way. With the return of peace they want war restraints removed. Armistice Day in 1918 marked a definite break with the preceding war economy and it is possibly understandable why certain wartime Washington executives of that day forthwith banged shut their desks and went home.

There will apparently be no such situation this time. The fall of the Nazis will not close the war. But with their collapse large-scale reconversion and demobilization will come upon us immediately, at the same time that we continue to operate under wartime government controls until the war in Asia is at an end.

Thus the current moot question of whether private business or government should lead the way in postwar re-employment can be made to answer itself.

On the one hand, demobilization and reconversion can this time go forward systematically: at first, with the continuance of war controls under which the preliminary re-employment problems can be the more expeditiously settled; later on, with expanding individual initiative as experience thus gained is more and more taken over by local grassroots implementation under a minimum of centralized public coordination.

On the other hand and because of the same doublebarreled and staggered war situation, in any central agency such as the Reconstruction Employment Commission herein proposed, representatives of business, labor and agriculture will necessarily have to work together at the outset under wartime restrictions, with government leading the way. But for these representatives of major private economic interests, this can be a blessing in disguise. Let them courageously take hold of the unique opportunity that may thus be afforded to learn from one another and from wartime necessity how a high employment economy can be operated. Let them then, with even greater courage and vision as reconversion and demobilization take on momentum after the Nazi collapse, continue to work together and to share with a less restrictive war government the responsibility of maintaining high employment levels during the period of transition. And. let them finally, with still greater fortitude and statesmanship, carry through a cooperative high employment plan of their own, with governmental participation reduced to a bare minimum.

The task is colossal and its accomplishment will re-

OBITUARY

RECENT DEATHS

DR. LEWIS R. JONES, professor emeritus of plant pathology of the University of Wisconsin, died on March 31 at the age of eighty years.

DR. ALBERT E. EDGECOMBE, associate professor of botany at Northwestern University, died on March 30. He was forty-eight years old.

DR. RALPH EMERSON MYERS, one time professor of

SCIENTIFIC EVENTS

THE ROYAL SOCIETY

THE following scientific men were nominated by the council of the Royal Society for election by the fellows of the society at a meeting that was held on March 22:

- COLEBROOK, LEONARD. A member of the scientific staff of the Medical Research Council. Distinguished in the application of bacteriology to clinical medicine, he played a leading part in the practical establishment of the "sulpha" drugs, and has thrown much light on the fevers of childbirth. During the war he has directed important investigations on burns.
- FARREN, WILLIAM SCOTT (Farnborough). Aeronautical engineer. Director of the Royal Aircraft Establishment. He has been associated with aeronautical research and development continuously since 1914, and has contributed greatly to advances in the science and practice of aeronautics.
- FEATHER, NORMAN (Cambridge). Physicist, university lecturer. Distinguished for investigations which have added much to knowledge of the spontaneous and induced disintegrations of atomic nuclei.
- GADDUM, JOHN HENRY (Edinburgh). Professor of pharmacology. Distinguished for his work on the identification and estimation of acetylcholine, adrenaline and histamine in animal tissues and for his experimental contributions to the conception of cholinergic and adrenergic nerves.
- GODWIN, HARRY (Cambridge). University lecturer in botany. Distinguished as a plant ecologist, and especially for his contributions to the knowledge of the post-glacial history of British vegetation based on the pollen analysis of recent deposits.
- GULLAND, JOHN MASSON (Nottingham). Professor of chemistry. Distinguished for his analytic and synthetic work in the phenanthrene group of alkaloids, and for

quire the best efforts of every forward-looking American. Unless business and government adopt some cooperative plan and start without delay to carry it through, there seems little hope for escape from a repetition of the unemployment calamities that followed the last war, and on a magnified scale.

pharmacology and physiological chemistry at the George Washington University School of Medicine and more recently a radiologist in Oklahoma City, died on March 14 at the age of fifty-seven years.

SIR THOMAS LEWIS, F.R.S., heart specialist physician at University College Hospital, London, and honorary consulting physician to the British Ministry of Pensions, died on March 17 at the age of sixtyfour years.

his work in the development of the chemistry of substances of biological importance.

- HARVEY, HILDEBRAND WOLFE (Plymouth). Marine biologist. Distinguished for his contributions to our knowledge of the "productivity of the sea" by coordinating the varied factors, physical, chemical and biological, which determine it.
- ILLING, VINCENT CHARLES (Imperial College, London). Professor of geology (oil technology). Distinguished for his researches on the relation of texture of sediments to oil accumulation and for refinements of stratigraphical and geophysical methods applied to interpret the structure of oil-bearing lands.
- INGHAM, ALBERT EDWARD (Cambridge). University lecturer in mathematics. Distinguished for his researches in pure mathematics, particularly in the theory of numbers.
- KAY, HERBERT DAVENPORT (Reading). Director of the National Institute for Research in Dairying. Distinguished for his biochemical work, particularly for his investigations upon organic phosphorus compounds and the phosphatases. Recently he has applied his methods to the practical problems of dairying.'
- LEWIS, WILFRED BENNETT (Cambridge). Physicist, university lecturer. Distinguished both for his contributions to the investigation of the structure of atomic nuclei and also to the development of the science of electronics, with special relation to ultra-high frequency radiation.
- LONSDALE, KATHLEEN (London). Physicist, Royal Institution. Distinguished for outstanding contributions to the investigation of the crystalline structure of organic compounds by means of x-ray analysis. Particularly important have been her recent researches into the fundamental mechanics of crystal structure.
- MAHALANOBIS, PRASANTA CHANDRA (Calcutta). Professor of physics, Presidency College; founder of the Sta-