

would increase their unit costs of production out of all proportion to any conceivable gain in prices.

From their beginnings, the U. S. Department of Agriculture, the state experiment stations and state extension services have promoted efficiency on the farm. Efficiency in the old sense of the word, however, is not enough. As farmers well know, profits can not be got just by improving plants and livestock, by fighting diseases and pests or by reducing the wastes of marketing. Ordinary technical efficiency reduces only the cost of production. Low-cost production may mean loss to the farmer if it is excessive production. Under present conditions it is necessary also to adjust the output to a changed world market.

Low cost per unit of production, when total production has been adjusted to effective demand, directly increases the farmers' net income. There is a definite limit to the volume of farm goods which can be disposed of under existing domestic and export consumption demands, at a price returning a fair income to the farmer. When this limit is reached, the only sound economic way in which the farmer can increase his actual income is by utilizing the efficient technique of production which lowers his unit cost and leaves him a greater share of the market price which he gets for his goods.

Action taken under the Agricultural Adjustment Act of 1933 enables farmers to plan their production. It seeks to transform blind competition into broad-vised cooperation and to correct the result of previous mistakes. Meantime scientists continue their research in various problems of farm production. These two kinds of departmental activity must march together.

Agriculture needs not less science in its production but more science in its economic life. It is possible to have a full science, embracing the distribution as well as the production of wealth.

In the last year our farmers have taken their first steps toward matching efficiency in production with

efficiency in economic adjustment. As they proceed along this path they will realize that the more they have of the one type of efficiency, the easier they will find it to achieve the other. The reason is plain. Efficient production is more dependable and therefore more easily controlled than inefficient production. By emphasizing economic and technical problems equally, and by indicating their interdependence, the department advances upon a logical path, in which its various activities are wholly consistent one with another.

We might just as well command the sun to stand still as to say that science should take a holiday. Science has turned scarcity into plenty. Merely because it has served us well is no reason why we should charge science with the responsibility for our failure to apportion production to need and to distribute the fruits of plenty equitably. That failure we must charge squarely to organized society and to government. We need economic machinery corresponding to our scientific machinery in precision, in power and in delicacy of adjustment. Science has done the first job, and done it magnificently. It has shown us how to produce. Now it must show us how to distribute what we produce. It must go forward and not back. To production science we must add economic science, without for a moment ceasing to advance the former. Because we have surpluses of certain things does not mean that we have too much wealth or too much power to produce wealth. To suppose that we have is to imply that man would be better off without means to make nature do his will.

To produce efficiently is to release time and energy for other uses, adding to the enrichment of life. Not to produce as efficiently as possible would be silly. Not to regulate the total volume of production, to relate it to consumptive demand, also would be silly. No factory is expected to fail, even when producing at less than capacity, to take advantage of new efficiencies. The same reasoning applies to agriculture.

WORK OF THE AMERICAN MUSEUM OF NATURAL HISTORY¹

By President FREDERICK TRUBEE DAVISON

My first year in the president's office, and entering upon its duties as a layman, have given me some very decided impressions. No one who has the privilege of measuring the influence of the museum at the present time could fail to be filled with admiration at the great accomplishments of my distinguished predecessor, Professor Henry Fairfield Osborn, who for twenty-five years exerted outstanding qualities of leadership in the scientific and educational worlds.

¹ Sixty-fifth annual report to the trustees.

His work was not confined to purely scientific or educational activities, but carried with it a great spiritual force which has left a real mark not only on the city, but on the entire nation.

Under his guidance, the museum has established a fundamentally sound policy in accomplishing its mission, which falls into two general parts—first, scientific, and second, educational. Professor Osborn gathered around him a group of men and women, each holding a fine position in his or her particular

field of scientific activity, which has given the institution a high place the world over. Their work is the keystone of the museum's usefulness. Without it, progress and continuing influence would be impossible. That work must be extended and expanded.

In my effort to obtain a conception of the range of their activities, I have been greatly impressed at the extent of their work. Their research covers practically the whole field of natural science, from astronomy to microscopic organisms, but all directed in a field of legitimate museum operation, and with an eye not alone to pure science but in an effort to make simple and attractive to the layman, child and adult alike the mysteries of nature.

That the educational value of the museum is becoming increasingly appreciated is evident from the figures showing how many people came in direct contact with the institution. In 1933 we had 1,102,096 visitors within our halls. At the same time, direct contacts were made with over 31,000,000 school children, in addition to the large number of individuals and institutions reached by our magazine, *Natural History*, and our scientific publications.

In times of financial distress, when so many of our citizens are turning to institutions of this character during their leisure hours, it is of the utmost importance that we develop our scientific work, on the one hand, and extend our educational work on the other, in order that the former may become available, not alone to the comparatively restricted scientific world, but to the public as a whole.

In addition to the ordinary activities of the museum, its facilities have been made available, to the limits of its resources, to various programs for the unemployed.

In spite of a substantial reduction in appropriations made to the museum by the city and the corresponding shrinkage in our endowment income, there have been several notable contributions during the past year, made possible by the public-spirited interest of a number of individuals, together with a very evident desire on the part of the city administration and the Federal Government to cooperate in our educational program to the extent possible under present conditions.

In 1929, the late Mr. Harry Payne Whitney offered to give \$750,000 for the construction of the South Oceanic Bird Wing, on condition that the city would provide a like amount of money. This gift was accepted by the city, but in view of the fact that the financial situation was such that no more funds could be appropriated or bonds sold in the regular routine, the city in 1933 was still a quarter of a million dollars short of its pledge. The trustees of the museum offered to purchase at par \$250,000 of city bonds in order to provide the necessary funds for the city to

carry out its obligation to the Whitney estate, which offer was readily accepted by the city. Consequently, at the present time, completion of that great project, made possible by Mr. Whitney's generosity and that of his family, is definitely assured, and the Rothschild collection, presented to the museum by Mrs. Whitney and which still lies unpacked, will soon find a proper final resting place and be available to scientists the world over for scientific purposes.

Mr. Charles Hayden and the Reconstruction Finance Corporation have made it possible for us to realize one of the important objectives laid down by the trustees several years ago, of having a planetarium. Mr. Hayden very generously provided sufficient funds to purchase a Zeiss Projection Planetarium, together with a Copernican Planetarium, the Federal Government agreeing to purchase bonds for the construction of the building, the whole to be known as the Hayden Planetarium. The state and city governments cooperated in this project, thus assuring the people of New York one of the most dramatic and fascinating aids to education ever devised.

Exploration in many of its various forms is the very life-blood of progress in natural science, and in this modern age a new vehicle has entered that field and holds a position of fundamental importance—the airplane.

In all its history, the museum has given its enthusiastic support to sound exploration and is proud of the gifts which have been made of equipment used in all parts of the world on fruitful expeditions. A very notable addition to our exhibits has been made in this past year through the donation by Colonel and Mrs. Charles A. Lindbergh of the plane which they used in flying across the Arctic regions and the Pacific Ocean, and later in their exploration flights over Greenland, Iceland, the North Atlantic, Europe, the South Atlantic Ocean and South America. Probably no exploratory expeditions by air have ever been so well equipped as those conducted by Colonel and Mrs. Lindbergh, and their gifts to the museum are proving not alone of great interest but of real educational value.

One of the warmest friends the museum has ever had was the late Dr. I. Wyman Drummond, who, for some time prior to his death, was a member of our scientific staff and who had already made many gifts to our collections. Shortly after Dr. Drummond's death, his sister, Mrs. William Herbert, very generously presented to the museum Dr. Drummond's magnificent collection of carved ivories, jade and amber. There probably is no finer collection of its kind anywhere in the world, and the trustees are profoundly grateful to Mrs. Herbert and her family for making this collection available to the public

through the American Museum of Natural History. It is a fitting memorial to Dr. Drummond's great work in the field of his particular interest and his devotion to this institution.

These notable additions to the museum have been accompanied by many others of great importance, too numerous to mention in a report which must be brief in the interest of economy. The director will enlarge somewhat on this subject in his report.

The museum, like every other organization in the country, has been pinched by the financial depression. Our problem has been and will continue to be for some time to come one of fulfilling our duty to the public and at the same time of making both ends meet. As a result of the decrease in city appropriations, we have been obliged to close ten halls daily and to curtail our work in every possible direction.

The question was raised as to the advisability of instituting pay days. After careful consideration it was decided not to do this. The trustees felt that every conceivable effort should be made to keep our doors open "free every day in the year."

That the year 1933 was ended with a balanced budget was made possible by the loyalty and generosity of all the employees who cheerfully made a substantial contribution out of their own pockets to that end. They are continuing to do that during the present fiscal year, and I want them to know that their interest and efforts are deeply appreciated. After all, they are the ones who make the wheels go round, and to have made sacrifices in these times as they have done for the work to which they are devoting their lives is high tribute to their loyalty.

During the coming months, the work of the museum must go on with increased vigor and within our financial limitations. Its influence can and should be broadened on a national scale. The demands are heavier than ever before in our history. More people than ever are turning to us for assistance, particularly along educational lines. The future presents a challenge which is stimulating and which must be met. I am confident that it will be met through the joint effort of the trustees, our entire staff, our members and our friends throughout the country.

OBITUARY

NATHANIEL LORD BRITTON

THIS learned and productive scientist, whose death occurred on June 25, in his seventy-fifth year, was in all respects a son of the state and city in which he lived and died. Born and bred in Staten Island, of local ancestry, his early life and interests, which even in childhood were directed toward nature loving and studying, were closely bound up with the life of that island and have left their eternal imprint on the scientific and educational character of its community.

While the scientific world will be content to read and refer to his published works, we, who knew him more intimately, may do well to look behind the work and consider the conditions under which it was performed and the manner of its doing and form an estimate of the character and life of the man.

Professionally educated at Columbia, he became connected with it as instructor immediately upon his graduation, and the educational relationship thus established continued throughout life. Into the affiliation of Columbia's faculty with the scientific activities of the city, Dr. Britton entered most heartily and soon he became recognized as one of the dependable supporters of the work of several of these societies. He became active in the proceedings of both the Linnaean and Microscopical societies, but his special interest was in the academy and the Torrey Botanical Club, the successful development of both of which has been largely due to his service and influence, at the same time that he was equally active

in the work of the now flourishing Natural History Association of Staten Island. His later connection with the Botanical Garden, a city institution, brought him into close relations with the city government, so that he became associated with many of those who have conducted its political and financial affairs for a third of a century. Thus, while the many interests in this and foreign countries which have profited by his labors will feel his loss as a scientist, our city will also miss him as an active and distinguished citizen.

If asked to specify the strongest feature of Dr. Britton's work, I should refer to the thoroughness and practicality of his studies and views. He seemed to absorb the essence of everything that he studied and to possess the rare ability to turn it to immediate use. Attracted one day by the beauty of some drawings that lay before him, I inquired as to their source, and when told that he was himself the artist, I asked in astonishment, "Why—can you draw like that?"

"Of course," said he, "what do you suppose I did all that hard work in the drawing class for?"

I recall another day when very important blasting and clearing work on the Garden grounds, involving many workmen, was threatened with blockade because of the failure of the man who was running the steam drill. On being told of the situation, what did our director do but get busy with that drill, handling it with efficiency for several hours, until the situation could be adjusted.