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THE SEED CORN OF SCIENTIFIC PROGRESS

by

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Scientific research holds a new and proud position in the country. Most Americans now begin to appreciate the important part it has played in winning the war and they look to this same research in peacetime to create new industries and products, and to make possible a continually higher standard of living.

The lay public does not always realize, however, how this industrial scientific research builds upon the results of pure or fundamental research and how dependent it is on a constantly growing body of young scientists who are trained in research. The importance of both of these factors may soon be evident to everyone because the effects of the war in stopping both pure research and the training of young scientists are bound to make themselves felt in the very near future. The seriousness of the situation has been set forth in no uncertain terms by the country's scientific leaders in reports and addresses.

Roger Adams, Chairman of the Board of Directors of the American Chemical Society, touched on this problem in his talk on the U.S. Rubber Company's nation-wide radio program on Sunday, May 20. After a brief introduction of his subject, he stated:

> "Today I want to tell you part of the story behind this research. The layman often is inclined to regard the results of this scientific quest as miracles. Research has produced a host of brilliant discoveries. But they were not miracles. Instead, they were the product of years of patient, painstaking work by highly trained scientists, usually working in teams and utilizing the skills of numerous specialists.
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> "I could mention dozens of scientific accomplishments which appear to be miracles, but each of which was actually the culmination of long-continued cooperative effort of experts. Let me be content to mention only a few outstanding examples, such as high-octane gas, which powers our fighting aircraft; synthetic rubber, without which the wheels of war could not move; atabrine, which protects our soldiers and sailors from malaria; the sulfa drugs; penicillin; DDT; the beautiful transparent plastics which now are used primarily for windows in the turrets and noses of our bombers; powerful new explosives; marvelous new alloys.
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> "How are such discoveries made? How are these attractive, useful, and essential materials created? Not a single discovery is the result of a miracle or of crystal gazing."

The bulk of Dr. Adams talk was given over to the documentation of his statement in the last sentence of the foregoing quotation and he concluded with the following summary and reference to the future:

"Achievements such as those I have mentioned can be accomplished only by close cooperation between academic and industrial research laboratories. The war has all but stopped the basic, academic research which finds new truths and supplies new material upon which much of the industrial progress of the future depends. Years will be required before basic research activity again reaches its prewar level. The war also has stopped the training of new research chemists and chemical engineers. Thousands of academic and industrial chemists have been drafted into the armed services, with only a few of them in positions where they can use their technical knowledge. Furthermore, the research organizations associated with industry, which find new products and upon which industry relies for expansion and for creation of new jobs, are at a low ebb. There is no possibility that they can recover quickly in the near future. This is a matter of great concern to the scientists and should be to the public, for only by years of patient research by trained and competent investigators can we maintain the high level of achievement in the field of science, on which is based our position of eminence among nations."

Another picture of the problem is given by the following excerpt from the report of THE ROCKEFELLER FOUNDATION, "A Review for 1944", by Raymond B. Fosdick.

"The policy of the American government in regard to the training of scientific men during wartime has been characterized in many responsible quarters as fundamentally shortsighted. Unfortunately, the accuracy of the characterization can scarcely be challenged. Where England and Russia have sought to protect their future by guarding the flow of new scientific personnel, our policy seems to have been largely dictated by expedience and the apparent necessities of the moment. In Russia, students of ability in science are not permitted in the armed forces while Great Britain has succeeded in minimizing interruption in the training of the men who will be her scientific leaders and teachers in the next generation. With us, science professors and students alike have largely left the universities. Except for a few 4-F's, we now have practically no male students over eighteen studying science. Rightly or wrongly', says a recent report of the American Institute of Physics, 'Some of the seed-corn of American scientific progress for years has been ground up to make a day's feed for the war machines'.

"In handling of scientific personnel during the war, we here in the United States have been spending our capital with reckless disregard of the future. As an officer of the National Research Council expressed it: 'We are committed to a policy of getting along with our present stock pile of trained personnel in the technical branches, even though that stock pile comprises a very perishable commodity.' In other words, we gambled on a short war. Dr. Arthur Compton has underscored the sobering possibility that when the war is won, we may find that we have gained a Pyrrhic victory, having lost so much of our technical strength that we shall be unable to meet the needs of the next generation."

The Rockefeller Foundation has itself taken a step to help remedy the situation by making a grant of $335,000 to the National Research Council for the establishment of a temporary national program of pre-doctoral fellowships for graduate study in the natural sciences. The announcement in SCIENCE carries the following statement:

"The council and the foundation have developed this program to help to alleviate the very serious set-back to American scientific competence resulting from the war's interference with normal educational processes.

The almost complete cessation of consecutive professional training which has occurred in scientific fields will make impossible for some time the normal accession of additional highly trained personnel. These losses, in the face of sharply increasing demands for such personnel, will inevitably retard to the danger point the resumption of scientific progress after the war. The resulting handicap to postwar industrial recovery, public health and military security is a matter of national concern.

"It should be realized, however, that this generous grant is sufficient to furnish financial assistance to only a moderate fraction of all graduate students who should resume study for advanced professional degrees in the natural sciences and that, therefore, other types of assistance heretofore available should not be curtailed. The program is planned also not to divert too many qualified candidates from part-time teaching positions, since it is expected that colleges and universities will, after the war, be overburdened with undergraduate students in these fields."

The problem set forth in these statements is of particular concern to us in the Northwest. We are about to launch a program calling for new research and an expansion of present research activity at a time when there is a shortage of trained personnel and an accumulated deficit in pure research. Since we cannot afford to postpone longer the program for industrial scientific research on the Northwest's great resources (forests, fisheries, minerals, and power) it behooves all who are interested in this research to lend support and encouragement to all universities and colleges sponsoring research of any kind and to see to it that all young high school students with talent and aptitude for science are encouraged to go to college to get as much of a start in their training as is possible under present conditions. The problem is an urgent one; the remedial steps are vital to the development of the Northwest.

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OREGON MINING NEWS

The Sumpter Valley Dredge resumed operations July 5, 1945. Prior to commencing operations the dredge was completely reconditioned and modernized by the installation of Pan American jigs designed to facilitate the recovery of finer gold.

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Messrs. Bodelson and Sammons are continuing to explore a large acreage of placer ground they control in lower Sumpter Valley, Baker County. This work consists of both shaft and drill exploration and has been in progress for a period of approximately eight months.

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The tailings from the old Rainbow Mine in Mormon Basin, Baker County, will be cyanided in a plant being installed by Messrs. Gardner and Bradshaw who have successfully conducted similar operations on other tailings in eastern Oregon during recent years.

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Mr. Kapschull has just concluded a preliminary survey and examination of the Rainbow Mine, Mormon Basin, Baker County, with the view of conducting some exploratory development in the near future. The nature of the proposed exploration is uncertain at the moment, but several cross-cut tunnel sites have been spotted and diamond drilling is being considered.

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Installation of a mill at the Gray Eagle antimony mine near Baker, Oregon, is about completed. Mining operations, which were suspended while the mill was being installed, are scheduled to be resumed in the near future according to Mr. Anthony Brandenthaler, owner and operator of the property.

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In addition to its regular cement production, the Oregon Portland Cement Company has a contract to deliver 66,000 tons of agricultural lime rock, according to an announcement by the A.A.A. in PIT AND QUARRY, June 1945. This rock will come from the company's quarry at Lime, Baker County, Oregon, and will be used almost exclusively in the Willamette Valley.

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The Woodward property on East Eagle Creek, Baker County, is being reopened by the Chadwell brothers. Work consists of both new drifting and cleaning out of old caved workings.

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Ibex Mining Co., P.O. address Vancouver, Washington, is milling ore from the Ibex Mine, Cracker Creek District, Baker County. About 10 men are employed in the mine and mill.

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Small but steady production of monumental granite is being maintained at the Northwest Granite Quarry, operated by George Burr, Haines, Baker County, Oregon.

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The Baker Diatomite Company has recently taken over property containing diatomaceous earth occurrences near Keating, Baker County.

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The Grande Ronde Oil and Gas Company, Mr. M. R. Wallace, Piedmont, California, is planning to drill a deep test well for oil in the La Grande valley near Hot Lake, Union County. Work on the derrick is about completed.

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The Union Silver Mining Company is now re-equipping its Indiana Mine, Camp Carson District, Union County, with heavier machinery, and plans to continue exploratory work. The ore is a lead-zinc-silver ore.

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The Enterprise Lime Company has taken over the old Black Marble Company quarry and plant near Enterprise, Wallowa County. Some lime was burned late in 1944, but operations were temporarily suspended due to difficulties in trucking between the quarry and plant during the spring thaws. The plant is completely reconditioned and the company plans to resume burning of lime immediately. The entire production to date has gone into industrial channels, but the plant is equipped to produce several of the various processed products for the building trade and agricultural use after the war.

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Light weight cement building blocks are being made in Bend, Deschutes County, by the Bend Concrete Products Co. Pumice is used for the aggregate.

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Various mine owners have returned to their properties and plan to spend the summer doing prospecting work. In the Greenhorn District, Grant County, Mr. Van Hallberg is at the Banzette; Mr. Hayes is at the Rabbit Mine; Frank Klein is at the Golden Gate and Mr. Helmer is at the Paramount claims. In Mormon Basin, Mr. McAllister has returned to his Mannahan Group.

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Mr. Arnold Muck of Portland has completed an access road to his limestone deposit on Cheney Creek which is about eight miles southwest of Wilderville in Josephine County. Some equipment has been moved to the quarry site to be used in development and exploration.

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The Sullivan Lime Co. at Rogue River is mining and grinding 80 tons of agricultural limestone daily from their quarry on the left fork of Foots Creek. The limestone is going largely to the Willamette Valley where it is being used for agricultural purposes. A small quantity is also sold locally.

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Mr. P. H. Holdsworth of Seattle is preparing to pump out the Almeda mine which has been flooded since 1942 when closed because of war conditions. Prior to closing ore was shipped to the American Smelting and Refining Co.'s smelter at Tacoma. Mr. Holdsworth expects to resume his diamond drilling and exploration program and to ship siliceous gold ore to the Tacoma Smelter as labor and materials become available.

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Mr. H. S. Fowler, examining engineer for the Consolidated Mining and Smelting Co. of Canada, Limited, spent a week during the early part of June examining copper and gold properties in southwestern Oregon.

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Mr. Ben Baker is putting his 20-ton concentrating mill in operation near Bolan Lake to treat lead, gold, and silver ore from several adjacent properties.

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Mr. W. B. Robertson has resumed diamond drilling at the Oregon Chrome Mine on the Illinois River as a result of the Metals Reserve Co. announcement that they would continue to purchase chrome ore until the end of 1945.

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Mr. D. C. Beyer has resigned as engineer in charge of the Grants Pass stock pile for the Metals Reserve Co. His assistant, Mr. H. A. Jensen, is in acting charge of ore purchase. The Metals Reserve Co. has not announced who will replace Mr. Beyer.

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COOS BAY COAL REPORT

Important coal reserves amounting to many millions of tons located close to tidewater are described in a 160-page bulletin entitled "Geology and Coal Reserves of the Coos Bay Quadrangle, Oregon," just released by the State Department of Geology and Mineral Industries. This report gives the results of a survey authorized by the forty-second Oregon Legislative Assembly and financed jointly by the State and Coos County. John Eliot Allen and Ewart M. Baldwin, department geologists, are the joint authors.

Many analyses show Coos Bay coal to be satisfactory for both domestic heating and industrial purposes. Formerly this coal was mined and shipped to San Francisco by coastal vessels. Cheap fuel oil killed this market, and until recently, mining of Coos Bay coal has been relatively dormant. A new project designed to mine and clean coal by modern methods has recently been put into production at Coos Bay.

The bulletin contains a detailed description of the geology of the Coos Bay area, and includes a two-color geologic map of the Coos Bay quadrangle. Results of exploration of 1000 acres of coal land by shallow drilling in search of stripping coal are also given. The price of the bulletin is $1.00 postpaid; it may be obtained by writing the Department at 702 Woodlark Bldg., Portland 5, Oregon.

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OREGON'S OLDEST PRACTICING ENGINEER PASSES

DeWitt Clinton Nelson of Baker, who actively practiced civil and mining engineering in Baker, Oregon, for 67 years, died July 3. He practiced up to within a few days of his death and would have been 94 years old had he lived twelve days longer. It is believed that in point of long continued professional work his remarkable record has been unsurpassed.

Mr. Nelson was born in Butler, Montgomery County, Illinois, July 15, 1851, the son of Levi and Nancy J. (Wood) Nelson. The family crossed the plains by ox team arriving at Portland, Oregon, in September 1852. They lived in Portland until 1865 when they moved to LaGrande and thence to Baker in 1867.

In 1878 Mr. Nelson began his professional career as a civil and mining engineer. He became a U.S. Deputy Mineral Surveyor and was also active as a stockholder in the Baker Iron and Supply Company. Mr. Nelson married Miss Mary A. McNulty in 1877. The two nearest surviving relatives are Mr. V.V. Sparks, Caldwell, Idaho, and Mrs. Mabel Nelson, Baker, Oregon.

Mr. Nelson was very prominent in the Masonic order, and was a member of the Baker Lodge, No. 47, F. & A.M.; Keystone Chapter, No. 15, R.A.M.; Hiram Council, No. 18, R. & S.M.; Esther Chapter, No. 11, O.E.S.; Baker Commandery, No. 9, K.T.; Oregon Consistory, A. & A.S.R.; and Al Kadar Temple, A.A.O.N.M.S.

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PORT ORFORD METEORITE

"Mr. Fixit" in the Oregon Journal of July 15 gives an interesting account of the discovery of the illusive Port Orford meteorite and credits Professor J. Hugh Pruett of the University of Oregon for the information supplied as follows:

In the year 1859 Dr. John Evans, government geologist for Oregon and Washington, was exploring the region near the coast in Southern Oregon. It was his habit to forward rock specimens to scientists in the East for laboratory analysis. One of these scientists was Dr. Charles T. Jackson of New York. While examining a package of new arrivals Jackson made a sensational discovery. In the lot was a piece of rock like nothing on earth. It consisted of a metallic network, inclosing stony material. Chemical analysis showed that the metal was principally iron containing about 9 percent nickel. This clue confirmed by other evidence, proved that the specimen was part of a meteor of unusual characteristics.

When the discoverer, Dr. Evans, learned what he had found he furnished from memory a description of the meteoric mass from which he had taken it. He said that it was "in the mountains about 40 miles from Port Orford and easily accessible by mules." He estimated its weight at fully 22,000 pounds and said that the exposed surface rose about three feet from the ground. When a Boston scientific society prepared a memorial to congress asking that search be made for the treasure, Dr. Evans recalled more details. He wrote: "There cannot be the least difficulty in finding the meteorite. The western face of Bald mountain where it is situated is, as its name indicates, bare of timber, a grassy slope without projecting rock in the immediate vicinity of the meteorite. The mountain is a prominent landmark, seen for a long distance on the ocean, as it is higher than any of the surrounding mountains." But in 1860, before arrangements for the expedition to find and unearth the strange meteorite had been completed, Dr. Evans died. No one else had his exact knowledge of its whereabouts. The missing meteorite has never been found. It is mentioned among the who's who and where's where of meteorites in scientific catalogs with the location given as "latitude 42 degrees, 46 minutes north and longitude 124 degrees, 28 minutes west." This would be about right for Port Orford, but it doesn't help to spot the meteorite. The conservative and scientifically skeptical Smithsonian Institution offers a reward for its discovery and plenty of scientific bodies would pay a good price for it.

So if anyone wants to pick up a little loose change and get his name into a scientific publication, all he has to do is to find the lost Port Orford meteorite. The winds and storms of many years may have covered it with dirt, but it is probably still lying where it fell. Rocks of that size and weight are likely to stay put.

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