Mo and Domsjo Company. In 1941 this company completed a factory for the production of sulphite spirit with a capacity for 10 million litres of 95 per cent. spirit a year. At this factory intensive research work is going on, with the view of producing various synthetic products from the spirit. From the black lye obtained in the sulphite pulp process there are produced *inter alia* certain crude acids, the first factory for using this raw product having been built at the Bergvik och Ala pulp mill. The sebacic acid produced here, called "pine fatty acid," is used to replace fat in washing mediums, as a substitute for linseed oil in paints, etc.

The output of charcoal in Sweden has trebled in the last couple of years, mainly due to the extensive producer-gas traction of motor-cars, and the by-products from the carbonization are now being recovered more carefully than before. The charring of old tree stumps, with their high content of rosin, alone gives about 20,000 tons of tar a year. Wood tar is now used as motor fuel for fishing boats in place of crude oil, and has probably saved the Swedish high-sea fisheries from total stoppage. It is also used for the production of lubricants. In summing up the situation for the Swedish forest products industry, Mr. Cyren stated that in 1941 the Swedish exports of woodstuffs had declined by about one third, and the pulp and paper by two thirds, compared with the pre-war level. But in compensation the forests, by supplying cattle feed, wood fuel, motor fuel, lubricants, textile material, fatty oils and a good many other useful products, have saved the country from catastrophe.

INDUSTRIAL RESEARCH LABORATORY OF THE UNIVERSITY OF ROCHESTER

AN industrial x-ray laboratory equipped with a million-volt unit, one of the most powerful in the world, has been established at the University of Rochester. The laboratory is the joint enterprise of the university and eight industries. It was formally opened on April 19 with an inspection visit by industrial leaders, educators, scientific men and Army and Navy ordnance department representatives.

Dr. E. E. Charlton, of the General Electric Research Laboratories, who designed the apparatus, said in an address at a dinner in connection with the "open house" that the project represents "a novel and most useful cooperation in the joining of hands of university and industry in the developing of the full use of x-ray in the industrial field."

With the development of million-volt x-ray machines, minute inspection of heavy steel parts is possible in a matter of seconds and minutes, as compared with the hours or days required under the quarter-million volt apparatus used until recently. He continued: "Industry is waking to the potential value of this powerful new development, but this installation in Rochester will most usefully facilitate the exploring of its applicability to many diverse products at the same time that new problems are presented in devising the most efficient means for using this new tool. For instance, it seems most unlikely that the photographic film and the intensifying screen developed for use in industrial x-ray laboratories to-day are the optimum for million-volt radiography."

John H. Clough, president of the General Electric X-Ray Corporation of Chicago and an alumnus of the university, welcomed the enterprise as "recognizing a type and degree of cooperation between industry and an educational institution that I believe is unique in its conception. Certainly the university is to be congratulated upon its recognition and enthusiastic acceptance of a war-time responsibility to assist American industry in the production of materials that will spell victory for the cause of liberty, and the industries of the Rochester area that have participated in the establishment of the new laboratory are to be complimented upon their generous cooperation with an institution that can be the source of much assistance during this period of tremendous pressure on the country's manufacturing abilities and facilities."

He added, "the powerful x-ray apparatus thus made possible studies that provided a guide to manufacturing procedures that are faster and better than anything we have heretofore enjoyed." Beyond the practical value of the new laboratory, in his opinion, is the significant relationship between education and industry "that can lead to advances beneficial not only to themselves, but to all mankind."

The immediate use of the unit at the University of Rochester is to speed production of war materials in local industries by rapid tests of castings, making it possible to detect flaws in pilot castings to determine if the casting technique is correct before starting mass production.

The undertaking was financed by eight Rochester industries, among them Eastman Kodak Company, Rochester Products and Delco Appliance divisions of General Motors; the Pfaudler Company, the Rochester Gas and Electric Corporation, Consolidated Machine Tool Corporation, Symington-Gould Company and the Rochester Brewing Company.

The university supplies the scientific staff to make the tests and is free to use the equipment for research in metallurgy, medicine and engineering. Part of a second million-volt unit is installed in another part of the laboratory for medical research on cancer. The remainder will not be available until after the war.

Dr. Alan Valentine, president of the university, expressed its deep appreciation of the vision and generosity of the industrial heads who made the proj-

ect possible. Not only will the laboratory quicken the war effort, he said, but the collaboration it represents "holds great possibilities for after the war, in the availability of the equipment for research both from a medical and engineering standpoint."

In discussing the prospects for even more powerful x-ray machines, Dr. Charlton said: "We whose task it has been to raise the voltage limitations in x-ray sources are vastly impressed by the advantages which are taking place, and are eager to climb to further heights. We see no fixed barrier to the extension of our present design to considerably higher voltages and already have planned and hope soon to start the construction of a generator which will bring the next upward step. Just as million-volt x-rays have proved so much more advantageous than those of the quarter-million volt formerly used, so it may reasonably be hoped for still further advantages "as we progress into the multi-million volt field. How far that progress may continue before we reach the point of diminishing returns we do not yet know. That is one reason for our growing interest in the 100 million volt electronic accelerator which we have near completion in Schenectady, and our research will give us the answer."

RARE CHEMICALS

THE following chemicals are wanted by the National Registry of Rare Chemicals, Armour Research Foundation, 33rd, Dearborn and Federal Streets, Chicago, Ill.:

1. iso-thymol (U.S.P.)
2. l-mono-iodotyrosene
3. 1-3,5 di-iodothyronene
4. di-lauroyl peroxide
5. Succinyl peroxide
6. di-butyryl peroxide
7. acetyl benzoyl peroxide
8. pyrophosphate peroxide
9. phenylactic acid
10. phenylpyruvic acid
11. p-hydroxyphenyl pyruvic acid
12. ethylene disulphonate
13. zinc dimethyldithiocarbamate
14. hexammine cobaltic chloride (U.S.P.)
15. sodium penta cyanoammine ferroate pure
16. cobalt thiocyanate
17. p-cyano benzaldehyde
18. indican (relatively pure)

AWARD OF THE NICHOLAS APPERT MEDAL TO DR. PRESCOTT

THE Nicholas Appert Medal was awarded to Dr. Samuel Cate Prescott, emeritus dean of science of the Massachusetts Institute of Technology, at a meeting of the Chicago Section of the Institute of Food Technologists.

The presentation will be made by M. E. Parker, chairman of the Section, at the annual banquet session at the Statler Hotel, St. Louis, Mo., on June 3.

This award was established in 1941 by the Chicago Section, then under the chairmanship of Dr. E. H. Harvey, now chairman of the St. Louis Section. The medalist is elected by a jury of nine leading technologists representing various divisions of the food processing industry from as many different geographical areas. Eligibility for the award is based on preeminence in the field of food technology and on contributions to the progressive development of food manufacture and processing.

During World War I food dehydration for overseas shipment became Dr. Prescott's chief activity as a division chief in the U. S. Department of Agriculture and later as an Army officer. Upon return to peace-time activities, his previous work with the application of low temperatures for food preservation gave him entrance into the field of quick freezing. During the formative years of that industry his counsel and guidance were much in demand.

Since his retirement last June as dean of science of the Massachusetts Institute of Technology, he has again been called into consulting service by the Dehydration Committee of the U. S. Department of Agriculture and by the Research Laboratories of the National Canners Association. At the present time he is active in that work.

As dean of science at the Massachusetts Institute of Technology, Dr. Prescott initiated the International Food Technology Conference at Cambridge, Mass., in September, 1937, and again in June, 1939, which resulted in the founding of the Institute of Food Technologists.

CONFERENCE ON PHYSICS

AS the guests of the President of Mexico, General Manuel Avila Camacho, and the Governor of Puebla, Mexico, Dr. Gonzalo Bautista, a group of prominent men of science from the United States will go to Mexico to attend the First National Conference on Physics to be held in Puebla the first week in May.

The call for the conference was issued in October, 1942, by Governor Bautista, the director of the National Astrophysical Observatory at Tonanzintla, Puebla, Señor Luis Enrique Erro and the president of the University of Puebla, Dr. Raimundo Ruiz. It stated that "a people that pretends to secure all the advantages of civilized life can not overlook the progress of physics nor can it substitute the tremendous resources of this science with activity in other fields, no matter how important these may be."

The agenda for the conference embraces four broad points: