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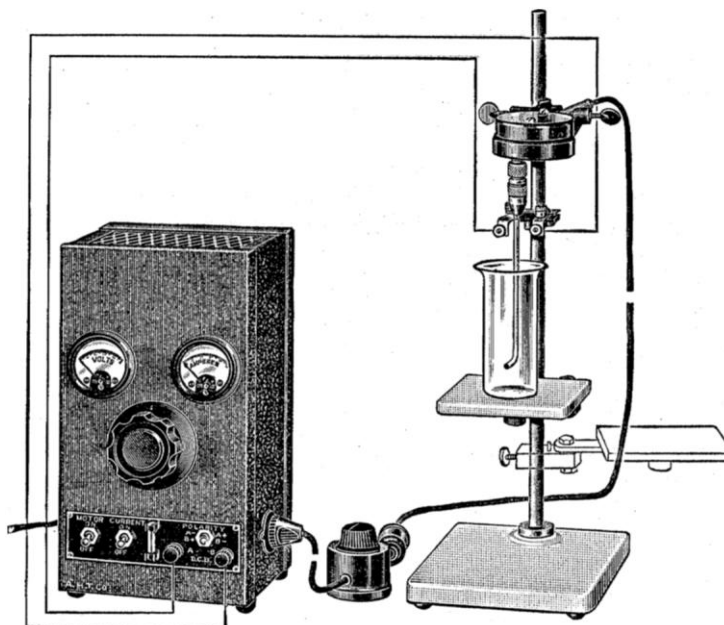
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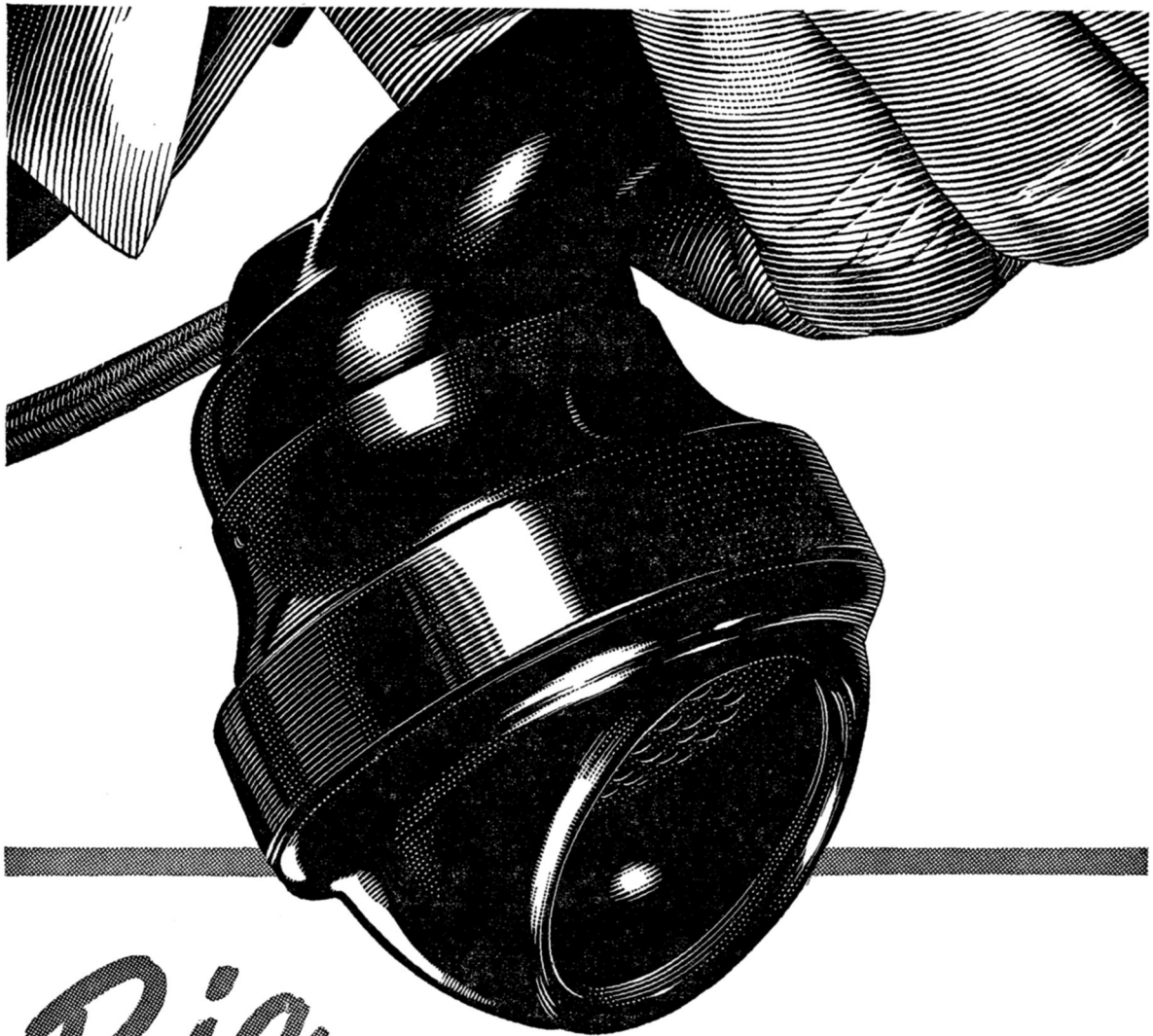
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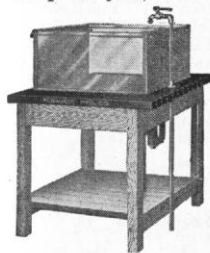
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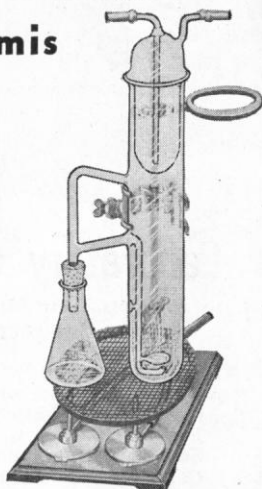
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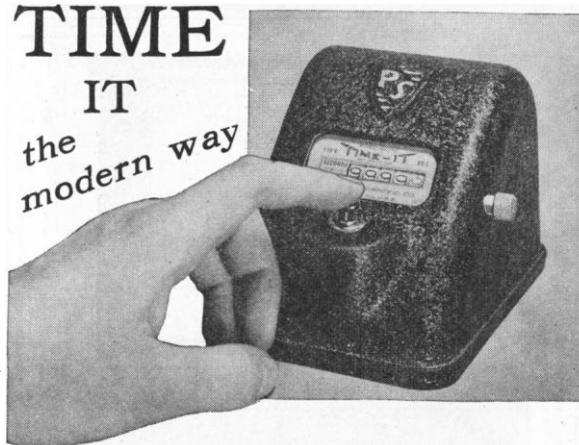
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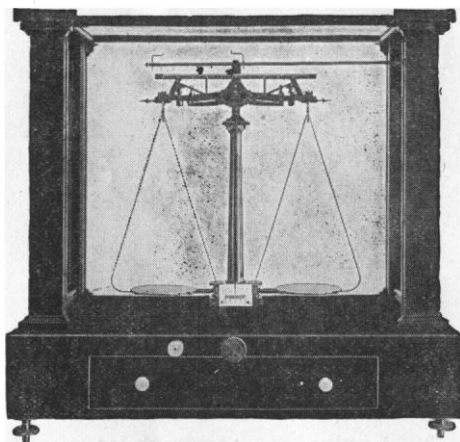
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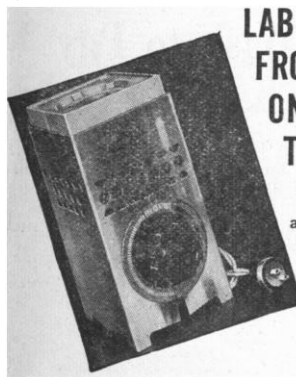
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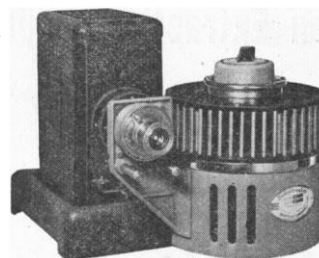
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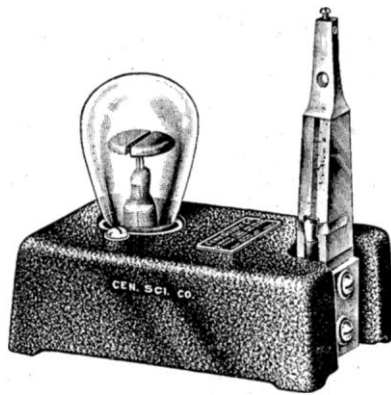
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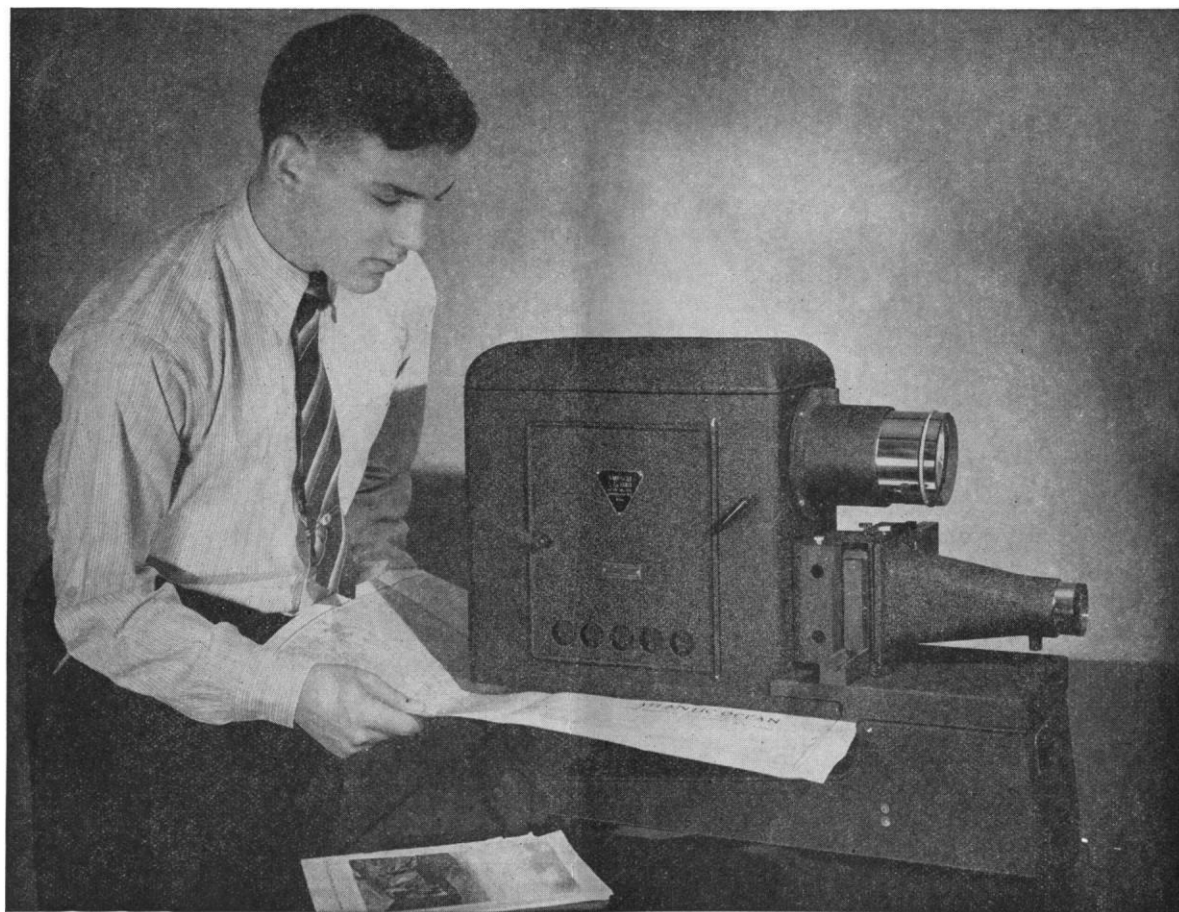
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# SCIENCE

VOL. 91

FRIDAY, APRIL 5, 1940

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## PRESENTATION OF THE NOBEL PRIZE TO PROFESSOR ERNEST O. LAWRENCE<sup>1</sup>

By Professor RAYMOND T. BIRGE

UNIVERSITY OF CALIFORNIA

Mr. President, Mr. Consul-General, Dr. Lawrence,  
Ladies and Gentlemen:

SOUTH DAKOTA was admitted to the Union in 1889. It is thus a very young state, and one need not be surprised that as yet relatively few of its native sons have achieved great distinction. One of these few is Ernest Orlando Lawrence, who was born in Canton, S. D., on August 8, 1901. Ernest's father, Carl G. Lawrence, is now president emeritus of Northern State Teachers College, Aberdeen, S. D., and is living in Berkeley with his wife. The father of Carl Lawrence was Ole Lawrence, another school teacher, who, as an immigrant from Norway, settled at Madison, Wis., in the year 1840. Ernest's maternal grand-

father, Erik Jacobson, also an immigrant from Norway, was a South Dakota pioneer.

Ernest Lawrence is the first native of South Dakota to be elected to membership in the National Academy of Sciences, an honor that came to him in April, 1934, when he was only 32 years old. He is now the first native of South Dakota to become a Nobel Laureate. By an interesting coincidence, one of Dr. Lawrence's intimate boyhood friends, Dr. Merle A. Tuve, is at present in charge of nuclear physics research at the Carnegie Institution of Washington, where a huge 60-inch cyclotron, similar to the large Berkeley cyclotron, is now under construction.

Dr. Lawrence obtained his elementary education in the public schools of Canton and Pierre, S. D., and did his undergraduate college work first at St. Olaf Col-

<sup>1</sup> Address at the Nobel Prize presentation, February 29, 1940.

placed in melted paraffin under partial vacuum. When the bubbling ceases, infiltration is complete. The short time required for infiltration of the paraffin makes it possible for the micrologist to watch and to control the temperature of the bath so that it is kept but a few degrees above the melting point of the paraffin.

Since the demonstration at Columbus our attention has been called to equipment for paraffin impregnation *in vacuo* listed in an English apparatus catalogue<sup>2</sup> and to a description by C. E. Moritz of equipment similar to that here described.<sup>3</sup>

Aside from the cost of the English apparatus it obviously has certain disadvantages not possessed by the outfit we use. The English vacuum imbedding oven is all metal, which prevents viewing the tissue during the process of infiltration. Since, as noted above, the cessation of the flow of bubbles from the tissue indicates that infiltration is complete, it is desirable to be able to constantly see the tissue. It can then be removed and blocked at once. The English apparatus reduces the pressure on the paraffin with a hand pump. We have found it advantageous to keep the paraffin bath on the pump throughout the period required for infiltration which serves to remove all traces of chloroform and other volatile fluids that may be introduced with the tissue. This results in a paraffin of superior texture for cutting.

Moritz has redescribed and added to technique developed by Lebowich in 1936.<sup>4</sup> He uses acetone for dehydration preparatory to infiltration with a soap-wax mixture.

Our equipment permits the ready application of pressure reduction not only to the processes of paraffin infiltration but to fixation, dehydration and clearing as well. The apparatus is so simple and inexpensive that one can be assigned to each pair of students.

ROBERT T. HANCE  
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cork into which a glass rod one foot long had been inserted. The vial was then lowered into the freezing bath of dry ice and alcohol, rapidly twirling it during and after submersion by rolling the glass rod back and forth between the palms of the hands. The blood froze almost instantaneously in the form of a thin thimble in the bottom of the vial. The cork and rod were then removed without removal of the bottom of the vial from the bath. A new sterile aproned rubber cork was then inserted into the vial and the apron of the cork turned down and securely fastened with rubber bands. The vial was then allowed to submerge in the dry ice alcohol bath. Sixteen vials of infected rat blood were prepared in this manner.

The bath used was a wide-mouthed thermos bottle of five gallons capacity into which two gallons of ethyl alcohol and twenty pounds of dry ice had been placed. Additions of dry ice were made once to twice weekly to maintain the bath.

The viability of the trypanosomes was tested after forty-six days and after fourteen months by removing vials from the dry ice bath and allowing them to thaw either at room temperature or by submersion in cold tap water. The blood, when thawed, was hemolyzed but actively motile trypanosomes were present and on inoculation into young white rats produced fatal infections of *T. equiperdum* which could be transmitted in series.

WM. S. STONE  
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AND VETERINARY SCHOOLS,  
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#### BOOKS RECEIVED

- BELCHER, J. E. and J. C. COLBERT. *Experiments and Problems for College Chemistry*. Third edition. Pp. viii + 207. 17 figures. \$1.75. *Properties and Numerical Relationships of the Common Elements and Compounds*. Third edition. Pp. ix + 350. 34 figures. \$2.00. Appleton-Century.
- BOTLEY, C. M. *The Air and Its Mysteries*. Pp. xvi + 302. 33 figures, 19 plates. Appleton-Century. \$3.00.
- CHAMOT, E. M. and C. W. MASON. *Handbook of Chemical Microscopy. Vol. II. Chemical Methods and Inorganic Qualitative Analysis*. Second edition. Pp. xi + 438. 233 figures. Wiley. \$5.00.
- Comité National Français et Comité National Marocain de Géodésie et Géophysique, Année, 1938. Pp. 148. Le Comité, Paris.
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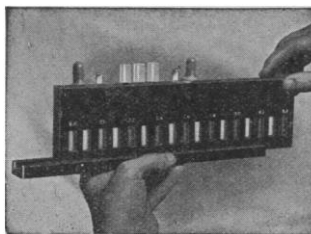
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