

wavemeter by this means. A tuning fork of known frequency, approximately 1,000 cycles per second, is used as the basis of the standardization. A low-frequency generator is tuned to successive multiples of this frequency by means of the cathode-ray oscillograph and corresponding settings of the wavemeter are obtained. A third generator is similarly tuned to multiples of these frequencies and thus by successive stages the standardization is extended to include frequencies as high as 5,000 kilocycles (60 meters). It is intended that this wavemeter be used as the basic standard for the standardization of commercial wavemeters.

THE DEVONIAN FOREST AT GILBOA, N. Y.

CONTINUED operations of the New York Board of Water Supply have brought to light 20 to thirty additional specimens of these earliest trees, all of which, by courtesy of the commissioners, have come to the State Museum, with the exception of one specimen presented to the American Museum of Natural History. These great stumps have now been located at three distinct horizons in the sandstones of late Devonian age, at or near Gilboa, and thus indicate the rising and falling of the shore land on which they grew. The botanical interest attached to this extraordinary occurrence is intensified by the fact that no satisfactory solution has been offered of the relationships of these trees, though they have been known for many years. The character of the stumps themselves and such portions of their tissue as remain have not proved a satisfactory clue to their nature, but Winifred Goldring, paleobotanist, has found in their foliation and fructification evidence which has led to the belief that they are seed ferns (*Pteridospermophyta*), partaking of the character of *Lyginopteris* and allied forms, but of a simpler organization. That trees of such magnitude, rising to heights of 30 to 40 feet, should appear so abruptly in geological history is sufficient to indicate what a long unobserved record lies back of this majestic plant growth, the oldest of known forests. In due time an effort will be made to reproduce in the State Museum the conditions under which these trees grew on the sloping shores of the Appalachian.

THE BOYLSTON MEDICAL PRIZES

THESE prizes, which are open to public competition, are offered for the best dissertation on questions in medical science proposed by the Boylston Medical Committee. At the annual meeting held in Boston in 1920 a prize of \$300 was awarded to an essay entitled "Acute Inflammation of the Nose, Pharynx and Tonsils" by Mr. Stuart Mudd, of St. Louis. For 1922 there is offered a prize of \$500 and the Boylston Prize Medal for the best dissertation on the results of original research in medicine, the subject to be chosen by the writer. The Boylston Prize Medal will be added to the money prize only in case the winning essay shows special originality in the investigations detailed. Dissertations entered for this prize must be in the hands of the secretary on or before February 1, 1923.

In awarding these prizes, preference will be given to dissertations which exhibit original work, but if no dissertation is considered worthy of a prize, the award may be withheld. Each dissertation must bear, in place of the author's name, some sentence or device, and must be accompanied by a sealed packet, bearing the same sentence or device, and containing the author's name and residence within. Any clew by which the authorship of a dissertation is made known to the committee will debar such dissertation from competition. Dissertations must be printed or typewritten, and their pages must be bound in book form. All unsuccessful dissertations are deposited with the secretary, from whom they may be obtained, with the sealed packet unopened, if called for within one year after they have been received.

By an order adopted in 1826 the secretary was directed to publish annually the following votes: (1) That the board does not consider itself as approving the doctrines contained in any of the dissertations to which premiums may be adjudged. (2) That, in case of publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith.

The Boylston Medical Committee is appointed by the president and fellows of Harvard College, and consists of the following physicians: Reid Hunt, M.D., *secretary*; William T.

Porter, M.D., Edward H. Nichols, M.D., Henry A. Christian, M.D., John Warren, M.D. The address of the secretary of the Boylston Medical Committee is Reid Hunt, M.D., Harvard Medical School, Boston, Mass.

ANTI-VIVISECTION LEGISLATION IN CALIFORNIA

THE proposed law prohibiting vivisection in California was defeated at the recent election by an overwhelming majority. Prior to the election the regents of the University of California, by President David P. Barrows, and the board of trustees of Stanford University, by President Ray Lyman Wilbur, issued the statement which follows:

The advance of sanitation, modern medicine and physiology, nutrition, the teaching of biology and the protection of our industries and agriculture all rest on animal experimentation. The control of the epidemic diseases of man and of animals, the management of surgical operations and of childbirth, and the certification of milk, food and water supplies would be impossible without the knowledge gained by such studies. In fact, the present-day protection of the public from diseases, which is vital to our community life, rests on animal experimentation. The University of California and Stanford University are vitally interested in the defeat of this initiative measure, since its passage would be a state-wide calamity.

Not only would it stop the research work now going on in the medical schools, hospitals and laboratories and in the Bureau of Animal Industry, but it would damage the market for most of California's food products and markedly reduce the confidence of visitors coming into the state. If California could not certify to its food and water supplies, could not guarantee protection against contagious diseases, could not provide certified milk, the effect on agriculture and industry in the state would be disastrous. The near collapse of the olive industry, due to the poisoning of a few people in eastern states, and the way in which the industry was saved by the researches carried on in the laboratories of the two universities, indicate the imperative necessity of freedom for the universities in animal experimentation. California food, instead of being looked to as an example of purity, would be shunned.

The initiative measure would make it impossible

to test with birds for deadly gases in the mines of the state. It would stop the manufacture of serum for the prevention of hog cholera, the preparation of vaccine for anthrax and the various other products that are required for the protection of our industries in agriculture and that annually save millions of dollars and prevent great mortality among domestic animals. Under the act, operations on various farm animals could be carried on without anesthetics to increase the palatability of foods, but no animals could be used in experimental work if the information obtained is for the benefit of a person or of the human race.

We feel that no worse attack on the welfare of the state and on the right of the universities to seek and teach the truth could be made. Every man, woman and child, every unborn babe, every domestic animal in the state, would be affected if this measure becomes a law. It strikes at all. It is unnecessary special legislation, due to prejudice and misinformation. No one will tolerate cruelty to animals. The present laws of the state are drastic and sufficient to control any abuse. We know that there is no cruelty to animals in the laboratories of the universities. They are in charge of men and women of the highest character who are unselfishly working to better the lot of their fellowmen and to advance the interests of their community and of the state. Anesthetics are always used for animals in the laboratory in exactly the same way that they are used by surgeons in the operating rooms.

We urge upon the citizens of the state the imperative necessity of defeating this initiative measure.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

REDUCED railway rates for those attending the fourth Boston meeting of the American Association for the Advancement of Science (to be held mainly in the buildings of the Massachusetts Institute of Technology, Cambridge, Mass., from December 26 to 30) have been fully granted by all of the railway passenger associations excepting the Transcontinental. Furthermore, in the territory of the last-named passenger association the privilege of reduced rates on this occasion extends westward on Montana lines to points in Oregon and Washington (excepting Portland), by routes through the Missouri River and St.