lem. It would be very desirable if authors of general physics text-books could be induced to exercise greater care in the treatment and statement of problems in calorimetry.

J. B. NATHANSON
CARNEGIE INSTITUTE OF TECHNOLOGY

CORYNEUM CANKER OF CYPRESS

THE Monterey cypress (*Cupressus macrocarpa*) is widely planted in the warmer temperate parts of Europe, South America, Australia and New Zealand. It has long been a favorite for hedges, windbreaks and for park purposes in the coastal region of its native California, occurring so generally that, like eucalyptus, it has become a characteristic of the landscape. The early California plantings enjoyed comparative freedom from pests and diseases. Then insects gained a foothold, becoming particularly active in trees on unfavorable sites and in the warm, dry interior valleys. Nearer the coast the cypress fared better and, while a gradual increase in damage from insects and root troubles has been noted, the loss among trees under proper care has not been large until the last two or three years, when dying back of specimens of all ages became general around the south half of San Francisco Bay. The injury was first attributed to the attack of bark-beetles, as these insects were commonly present in the dead trees. Mr. J. M. Miller, entomologist, United States Department of Agriculture, in the spring of 1927, reported to this office that he was unable to trace the dying back in certain trees at Palo Alto and Stanford University, California, to insects. From the appearance of the affected parts he was led to believe that a fungous disease might be responsible. The same trouble has since been found to be general in the portions of Alameda, Santa Clara and San Mateo Counties adjacent to San Francisco Bay. It has also been reported from Sacramento County, but is not yet definitely known to occur elsewhere.

Affected trees become conspicuous through the dying of individual parts of the crown, either branches or portions of the top. This continues until finally the entire tree is either killed or is rendered so unsightly that its removal becomes necessary. An inspection shows the dying to be due to the girdling action of bark cankers caused by a fungus. The affected bark first swells and soon begins to die in the central portion of the canker. The dying is accompanied by heavy resin flow, which furnishes one of the most characteristic indications for the presence of the canker. Ordinarily branch cankers are less than a foot in length, but on the main stem they may be longer. A pitch moth commonly works among the resinous material on the diseased bark, giving the appearance at first glance of being connected with the injury. The causal fungus is an apparently undescribed species of Coryneum, the blackish pustules of which usually appear irregularly scattered over the surface of the discolored, dead bark of the cankers. Inoculations on young Monterey cypress with spores of the fungus resulted in positive infections, both on wounded and unwounded young bark and on unwounded foliage. Typical acervuli of the Coryneum developed from a number of the infections. The common avenues of infection in the open have not yet been definitely determined. As control measures the removal of sources of further infection by the cutting-out and destruction of all cankers followed by applications of a standard fungicidal spray are indicated. So far the disease is confined mainly to Monterey cypress, but the well-known Italian cypress (*C. sempervirens*) is also severely attacked and it is not unlikely that other cypress species may be found susceptible.

No clue as to the origin of the disease has been found. To all appearances it has been present in certain of the localities where it is now serious for perhaps four or five years, but beyond that nothing is known. There is no record of any disease resembling it on the native cypresses of the state. Irrespective of its origin the canker has sufficiently demonstrated its destructive possibilities to warrant efforts for the prevention of its spread to localities where it is not now present. Further studies of the disease are under way.

WILLIS W. WAGENER
OFFICE OF FOREST PATHOLOGY,
BUREAU OF PLANT INDUSTRY,
SAN FRANCISCO, CALIFORNIA

MORE RESEARCH

SPEAKING of *research:* Ré-search is bad enough, but how about ré-zearch? One hears this occasionally from doctors of philosophy in various sciences. I once knew a minister who used frequently to pray for ré-zawrse, thus perpetrating three distinct errors in one comparatively short word.

JAMES S. STEVENS
ORONO, MAINE

IN reference to the letters as to "The Pronunciation of Research," in SCIENCE for May 4, I think there will be universal agreement that the Oxford Dictionary is the final court of appeal as to spelling and pronunciation of English. That gives the accent on the second syllable of "research" used both as a noun and a verb, and also places the accent on the second syllable in "researcher."

W. H. KUN