typical condition has been reproduced in all the above hosts. No one bacterial species is constantly associated with the trouble, and up to the present time we have isolated six types, each of which has caused extensive lesions in susceptible hosts when inoculated from pure cultures. Only during the months of December, January and February has this condition been induced experimentally; before and after this period small lesions develop but rarely damage the trees to any extent.

The souring of trees caused by stagnant soil water is prominent at times during the spring when the trees are starting into leaf. Trees standing in water which is moving through the soil are not damaged, but those subjected to stagnant water suffer in proportion to the damage to the roots. The leaves turn yellow, wilt as though lacking moisture, become brown at the edges and finally die. The affected roots become highly discolored and sour and die, while those not injured remain normal and continue to support the corresponding upper portion of the trees. In these cases a portion of the affected tree remains alive and continues growth. There are all gradations of top effect, and many cases recover if the water is drained off.

Many trees affected with sour sap of either of the above types become also infected with bacterial gummosis, which further complicates the question of the primary etiology of the trouble.

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SILVER OR GOLD

As a rule silver tarnishes to a greasy black color. I have found silver articles in the Near East which fail to blacken on weathering, but instead, become coated with a film of golden hue. One would think that the silver had been gold-plated. I investigated this interesting fact and discovered that silver originating in Caucasian deposits was particularly capable of this type of tarnishing. Apparently the small platinum content or the presence of some of the similar rare metals is responsible for this phenomenon.

Antique dress jackets of the Near Easterners, made of beautiful purple velvet and decorated with what seems to be gold braid, are to be found in the bazaars. This gold braid is silver—there is no trace of gold in it. Silver braid was used and in the course of time it tarnished to the gold color. Slightly rubbing it with a jeweler's touchstone reveals the silver beneath the outer film.

Two pieces of old Russian silverware, formerly used by the late czar of Russia, were presented to me. These were highly polished when given me. They are now beginning to exhibit this characteristic tarnish.

Some silver "Alexander the Great" coins which I unearthed in Macedonia fail to show this tarnish. The origin of the silver of these coins is probably Macedonia. Although silver is not found in Macedonia now, we do know that the early Greeks did find it along the banks of the Exidoros.

Perhaps all that glittered on the royal purple robes was not gold but silver!

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REPORTS

THE AMERICAN MUSEUM OF NATURAL HISTORY

DEFINITE plans to seek, through gifts from the public, $10,000,000 added endowment for the scientific and educational work of the American Museum of Natural History were adopted on May 5 by the trustees at their sixty-first annual spring meeting. The board confirmed selection of a committee, with President Henry Fairfield Osborn as chairman, to present actively during the balance of the year in the metropolitan area and throughout the country the needs of the institution.

This action followed submission of the annual report of the museum by President Osborn, who emphasized that mounting costs since the war and increasing demands for expansion of the museum's functions had brought about a severe financial stringency. Many important activities, he stated, were at a standstill or below normal, while projects necessary to keep the museum in its position of leadership in science and public usefulness were in abeyance.

"We are held back internally, while outwardly we are prospering," said President Osborn. "Annual public support of the museum, though increased, continues to fall far short of even the routine needs. Only the heavy emergency contributions by trustees have prevented the discharge of a large number of employees, but the budget thus temporarily balanced covers little more than ordinary maintenance for 1930. It holds no guarantee for succeeding years, and it has not prevented a sharp curtailment of the scientific work which is the very being of the museum and the basis not only of its prestige but of its unique service to the city, the state, the nation and the world at large.

"If the museum, which has become the particular pride of the people of metropolitan New York and virtually a household word all over the globe, is to continue its brilliant record of achievement, thus far

unbroken since its founding in 1869, it should have no less than $500,000 more in annual income. This would be accomplished by the sixtieth anniversary endowment fund of $10,000,000, first proposed some time ago, but thus far not vigorously advanced. So alarmingly urgent has become our situation that we can delay no longer. It is to be hoped that the next annual report will see this fund substantially in hand or promised."

Serving with President Osborn as a preliminary committee will be the following trustees: Treasurer James H. Perkins, Secretary S. Brinckerhoff Thorne, George T. Bowdoin, Douglas Burden, Cleveland E. Dodge, Clarence L. Hay, Junius S. Morgan, Jr., A. Perry Osborn, Daniel E. Pomeroy, Henry W. Sage, Leonard C. Sanford and Felix M. Warburg. George H. Sherwood, director of the museum, will be secretary of the committee.

Reviewing in his annual report the museum's status, which he declared was now threatened by lack of funds, President Osborn said: "All wealth and all health comes from knowledge of nature, and the American Museum of Natural History is advancing the knowledge of nature and the inspiration of nature on a scale unknown before in the whole history of education and of civilization."

But the present budget, he stated, was only "a minimum working budget," which had recently failed to cover some of the most valuable of the museum's activities. "Our explorations," he continued, "our researches, our expeditions, our publications, our educational work in school, college and university, our library, are suffering for want of adequate financial support to overcome the doubling or trebling of all costs since the fatal year 1914.

"The department of public health is entirely suspended; the library is very seriously crippled; were it not for Mr. Childs Frick's gifts, the department of vertebrate paleontology would have to stop its expeditionary work; other departments, like geology and geography and invertebrate paleontology, are operating at half their former rate; although under very able leadership, entomology is short-handed, and in practically all the exhibition halls of the museum the work of completing educational equipment has stopped.

"The two departments in which late President Morris K. Jesup was deeply interested, namely, woods and forestry and anthropology in all its branches, are restricted severely by retrenchment and undermanned."

Reporting on educational and scientific work of the museum, Director Sherwood noted the loss by death or resignation of seven members of the scientific staff, and added: "These men were all experts in their respective fields. It has been impossible to replace them because of the present critical financial emergency of the museum. In the depletion of our scientific personnel, research and publication are seriously retarded, and the museum is losing prestige in science.

"Overhead expenses must go on. They have had to be met at the expense of exploration, research and publication. The necessary financial retrenchment has reduced to a minimum the allowance for the research and publication side of the museum, until in 1929 almost none of the normal income could be devoted to exploration, which consequently has had to depend upon the special gifts of friends. When this situation is considered in conjunction with the museum's severe losses in scientific personnel the disastrous effect upon our scientific progress must be evident."

The income of the sixtieth anniversary endowment fund, it was announced by President Osborn, would be allotted for permanent support of exploration, research and publication; for additional assistants, to release curators and research workers for scientific projects and publication; for raising staff salaries to university and college grades; for the educational equipment and modernizing of the fifty old and new exhibition halls completed or under construction; for intensive high school, college and university education in laboratories and exhibition halls; for extension of the educational service, now reaching more than 1,000,000 public school children, to secondary schools; for preparation of existing exhibitions and collections to render the highest educational service to students and the visiting public, and for purchase of books to aid in the research activities. Provision also must be made, it was stated, for the development of future plans in connection with the addition of a new building section by the state and three new sections by the city, under the arrangement whereby the city provides land and buildings, and trustees and public the scientific work and the exhibitions.

G. N. P.

SCIENTIFIC APPARATUS AND LABORATORY METHODS

HIGH FREQUENCY EQUIPMENT FOR BIOLOGICAL EXPERIMENTATION

GROWING interest in the biological utilization of the electromagnetic spectrum in the range of frequencies made available by improvements in the three electrode vacuum tube has led to the design of a convenient apparatus for treatment of the usual laboratory animals and materials.