

this power, sufficient to cause any general illumination, or powerful enough to have influenced, over the whole ocean, the evolution of complex eyes, brilliant and complex protective colors, and complex commensal adaptations.

It seems to me probable that more or less sunlight does actually penetrate to the greatest depths of the ocean in the form of a soft sea-green light, perhaps at two thousand to three thousand fathoms equal in intensity to our partially moonlight nights, and possibly at the greatest depths equal only to starlight. It must be remembered that in the deep sea, far from land, the water is far more transparent than near the coast. A. E. VERRILL.

#### ALPHONSE LAVALLÉE.

DENDROLOGICAL science has met with a great, an almost irreparable loss, in the death of Alphonse Lavallée, the best-known and most successful student and collector of trees of this generation. Twenty-five years ago, under the advice and inspiration of Decaisne, he commenced to gather upon his estate at Segrez, near Paris, the collection of trees and shrubs which has since developed into the richest and most complete arboretum ever established.

Mr. Lavallée did not confine himself merely to the collection and cultivation of trees: he studied them thoroughly and critically, publishing from time to time the results of his investigations.

The nomenclature and synonymy of the forms and varieties of many genera of trees cultivated in the different countries of Europe, long ago fell into an almost hopeless confusion; and, to bring some order out of this confusion, Mr. Lavallée set himself resolutely to work. The results of these investigations were published, ten years ago, in the catalogue of his collections. A second and greatly enlarged edition of this useful work, written with a riper judgment and fuller knowledge, in many critical questions of synonymy, was nearly ready for the printer at the time of Mr. Lavallée's death. He had commenced, too, the publication of the *Arboretum Segrezianum*, of which, however, only five parts had appeared. This sumptuous work, superbly illustrated with figures engraved from steel, contained the descriptions and history of some of the rarest or least-known plants of Mr. Lavallée's collections. His latest published work, a magnificently illustrated folio in which are described *Les clématites à grandes fleurs*, has only just

reached the author's correspondents in this country. This was to be followed, in the course of the year, by an illustrated monograph of the genus *Crataegus*, which has long occupied Mr. Lavallée's attention. His collection of different forms of the species of this most difficult and perplexing genus was unsurpassed, and his opportunities for observing them in a living state unequalled; so that a valuable revision of this genus might have been looked for from his pen.

Mr. Lavallée, at the time of his death, was president of the Central horticultural society of France, and perpetual treasurer of the National agricultural society, and had just declined the professorship in the Museum d'histoire naturelle, lately made vacant by the death of his old master, Decaisne. He had been in ill health for several months, but his death was entirely unexpected. It was caused by aneurism, and occurred at Segrez upon the 3d of May, only a few hours after his return from a long residence in the south of France. Mr. Lavallée was only forty-nine years old at the time of his death. C. S. S.

#### BURIAL-MASKS OF THE ANCIENT PERUVIANS.

A RECENT contribution to the Bureau of ethnology illustrates one of the most curious of ancient burial customs. It is almost a universal practice with primitive peoples to deposit articles of value with the dead. The ancient Peruvians were most lavish in this respect. Food, raiment, implements, utensils, rich tapestries, and precious articles of silver and gold, as well as objects of superstitious regard, were freely sacrificed.

Most interesting of all these offerings were the mask-like heads generally placed within the outer wrappings upon the top of the mummy pack. At Ancon these objects were usually made of cotton cloth. A small square sack or pillow was made, and stuffed with leaves or seaweed. One side was painted to represent the human face, and to this a wooden nose was stitched. Hair was attached to the back of the head, and a more or less elaborate head-dress was placed upon the crown.

The specimen referred to is of this class. It was obtained from a grave in the vicinity of Lima, and purchased by G. H. Hurlbut of Chicago. It differs greatly from Ancon specimens, but is somewhat similar to an example illustrated by Squier, also from the vicinity of Lima. It is interesting chiefly on account of the heter-

ogeneous collection of ornaments and trophies with which it is bedecked.

The head is of heroic size, the face only being made of wood. This is strongly carved, having a prominent nose, and wide, firm mouth. The eyes are formed by excavating oval depressions, and setting in pieces of shell. First, oval pieces of white clam-shell are inserted, which represent the whites of the eyes: upon these, small circular bits of dark shell are cemented, forming the pupils. Locks of hair have been set in beneath the shell, the ends of which project, representing the lashes of the eye. The wooden part of the mask is flat behind; but the head has been neatly rounded out by a hemispherical bundle of dried leaves, which is held in place by an open net of twisted cords.

Besides this, a great variety of articles have been attached to the margin of the mask by means of five pairs of perforations. Upon the crown a large bunch of brilliantly colored feathers had been fixed: behind this, extending across the top of the head, is a long pouch of coarse white cloth, in which a great number of articles had been placed, — little packages of beans and seeds, rolls of cloth of different colors and textures, minute bundles of wool and flax, bits of copper and earth carefully wrapped in husks, bundles of feathers, etc. Encircling the forehead are long, narrow bands or sashes, one of which is white, the others having figures woven in brilliant colors. The ends of these hang down at the sides of the face.

Attached to the left side of the mask by long

stout cords is a pouch resembling a tobacco-bag, about six inches square, the fabric of which resembles a coarse sail-cloth: attached to the lower part of this is a fringe of long, heavy cords. From the opposite side of the head, a net was suspended in which had been placed a variety of objects, — a sling made of cords very skilfully constructed; bundles of flax and cords; small nets containing beans, gourd-seeds, and other articles; copper fish-hooks still attached to the lines, which are wound about a bit of corn-stalk or cane; neatly made sinkers of dark slate wrapped in corn-husks; together with many other curious relics.

These articles were doubtless the property of the departed, so placed in accordance with the established customs of the race to which he belonged. The mask-head was probably in itself an object of much consideration; although we are at a loss to determine its exact use by the living, or its significance as a companion of the dead.

W. H. HOLMES.

#### MEETING OF THE CIVIL ENGINEERS AT BUFFALO.

THE annual convention of the American society of civil engineers was held in Buffalo, June 10-13, and will be remembered by all who attended as one of the most successful in the history of the society. A spe-

