and 45 distinct species of insects have been reared from the excrement in which they passed their larval stages, and these include 35 distinct species of *Diptera*. Similar collections and observations have been made upon flies frequenting kitchens and dining rooms in different parts of the country. All of the material has been studied and specifically determined. The investigation will be continued and the results published next year.

Mr. Wm. H. Dall gave some informal 'Notes on Honolulu and the Hawaiian Islands,' from observations made there during a recent visit. He described the physical features of Oahu and their effects upon the climate, the characteristics of the flora and fauna of the city of Honolulu, laying particular stress upon their almost exclusively exotic character, and gave an account of the Bishop Memorial Museum, an institution reflecting the greatest credit upon the founder who endowed it, the board who have managed the investments, and the Director, Dr. W. T. Brigham, to whose energy, efficiency and wide knowledge is largely due the fact that Honolulu now has a Museum of Polynesian Ethnology and Natural History in many respects unique and which would be a credit to any city in either hemisphere.

Mr. G. K. Gilbert described the state of preservation of the celebrated 'Submerged forest of the Columbia River,' between the Dalles and the Cascades. From data connected with the geological history of the region he inferred that the submergence had taken place at least three hundred and fifty years ago. Since that time the roots of the trees, whose stumps still stand, have been continuously under water, but the upper portions of the shafts have been annually bared at low water and covered during flood. Despite this alternation of condition, which generally induces rot, the trunks are sound. The bark has disappeared, and several inches of the wood have wasted away, but what remains is firm and retains its natural color. Mr. Gilbert suggested that the continuous submergence of the roots may have operated in some way as a favorable condition, but it was the opinion of botanists present that the roots must have ceased to function immediately upon the death of the tree, and that the preservation of

the trunks was merely an extreme illustration of the durability of the wood of the species *Pseudotsuga douglasii*.

O. F. COOK,
Secretary.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 505th meeting of the Philosophical Society of Washington was held October 28th, at the Cosmos Club. Informal communications were made by Dr. Artemas Martin, on a method of extracting roots by successive subtractions and by Mr. C. K. Wead, on Museum Labels. The Director of the Geological Survey, Mr. C. D. Walcott, gave the results of his observations on a recent 'Geological Trip to Newfoundland,' and Mr. C. K. Wead described 'Some Arab Musical Scales.' The facts presented were made accessible by Land's French Translation of Al Farabi's 'Treatise on Music,' and confirmed in part by other authorities. The principal scale for the Lute was shown to be peculiarly dependent on the length of the neck of the instrument in comparison with the size of the player's hand: the five strings were tuned in fourths, and the frets were located partly by geometrical principles, and partly by bisections of distances; so ten notes were provided on each string, giving twenty-two to the octave. Later theorists reduced these numbers to seven and the much-discussed seventeen. The Modes each consisting of a selection of seven or eight of these notes were also dependent on the structure of the lute.

Some long-necked Tambours had entirely different scales tuned by the use of two strings, being built up by musical addition or subtraction of equal intervals, *i. e.*, by a step-by-step method—these scales had seven to ten notes at intervals of about half a semitone. Our current theories of the scale are utterly inapplicable to these facts.

E. D. PRESTON,
Secretary.

DISCUSSION AND CORRESPONDENCE.

THE NEED FOR A CLASSIFICATION OF PREHISTORIC IMPLEMENTS.

ABOUT a year ago Mr. A. E. Douglas, of the American Museum of Natural History, published a paper in which he urged the need of an