ologist; Wilfred E. Hampton, engineer, and Lieutenant Martin Lindsay, surveyor.

The whole project has the warmest assistance of the British and Canadian government departments. The British Air Ministry has lent Lieutenant d'Aets, who is a Royal Air Force officer, while the War Office has lent Captain Lemon, one of its most expert wireless operators. Many government departments are helping with loans of instruments, while the Vickers Aviation Company has offered a Vellore plane for experimental flights and the Royal Geographical Society has helped technically and financially.

A PRIMARY STANDARD OF LIGHT

THE Bureau of Standards has issued the following statement in regard to its work on a primary standard of light: Up to the present time no satisfactory standard has been available. In this country the unit of light (the candle) has been maintained by a group of 45 carbon-filament electric lamps, to which have been assigned definite ratings when burned under specified conditions. To keep the size of the unit of candlepower unchanged with such electric-lamp standards it was necessary that no changes take place in the lamps themselves, a requirement which can not be met indefinitely by any electric lamp or group of lamps.

The new light source consists of a hollow inclosure of fused thoria immersed in a bath of pure freezing platinum. It is reproducible in that it can be set up anew at any time and does not depend upon the unchanging character of any particular pieces of material. It depends only upon the constancy of a natural phenomenon, namely, the fact that pure platinum will always freeze at the same temperature. The light emitted each time the source has been set up anew has been found to be the same, as compared with the bureau's carbon electric lamp standards, within 1 part in 1,000. This is about the limit of accuracy attainable in photometry.

The old electric lamp standards were irreplaceable and their loss or a serious change in their properties, such as must eventually occur, would in the past have been nothing less than a catastrophe. If, however, such a loss occurred now, the bureau could replace these lamps without the assistance of outside laboratories by rating a new set of lamps in terms of the light emitted by the platinum standard. The relation of this light to the present unit of candlepower has been accurately established as one candle for each 1,700 square millimeters of opening.

It happens, fortunately, that the color of the light emitted by the new standard is practically identical with that emitted by the old standard. It is hoped that before very long the new light source will be recognized generally and adopted as an international standard.

REFORESTATION DURING 1929

FOREST planting by all the principal agencies engaged in the work of reforestation in the United States last year restored to tree growth a total of 111,175 acres, as shown by records just completed by the Forest Service.

The total acreage set out in young forest trees in 1929 included 107,557 acres in the continental United States, 2,084 acres in Hawaii and 1,534 acres in Porto Rico. Reforestation activities included the planting of 31,430 acres by 21 states and two territories, 5,920 acres by municipalities, 25,088 acres by industrial organizations, 539 acres by schools and colleges, and 1,516 acres by other organizations. Plantings by farmers for the extension or improvement of farm woodlots and windbreaks amounted to 24,825 acres, and plantings by other individuals, 6,650 acres. The U. S. Forest Service planted 18,027 acres of land on national forests in 1929.

Michigan, with 27,820 acres restored to tree growth, led the states last year in total acreage planted to forests. New York ranked second with 21,135, and Louisiana third with 10,583 acres. Other states which ranked high in forest-planting activities were Pennsylvania with 6,318 acres; Washington, 4,400 acres; Massachusetts, 3,938 acres; Ohio, 3,428 acres, and California, 3,023 acres.

Industrial forest plantings in 1929 included 10,060 acres planted by pulp and paper companies, 8,732 acres by lumber companies, 3,189 acres by water and power companies, 1,561 acres by mining companies, 100 acres by railroad companies and 1,446 acres by other industrial organizations.

To the end of the calendar year 1929, the cumulative total of all forest planting in the United States of which the Forest Service has record was 1,653,308 acres. This included 274,385 acres of national forest land planted by the federal government, 200,553 acres by states, 46,282 acres by municipalities, 193,262 acres by industrial organizations, 16,335 acres by other organizations, 5,215 by schools and colleges and 917,276 acres by farmers and other individuals. In cumulative acreage planted, Iowa led with 242,260 acres, Nebraska was second with 219,088 acres, Kansas third with 201,190 acres and New York fourth with 183,369 acres.

YALE UNIVERSITY AND THE BERNICE P. BISHOP MUSEUM

YALE UNIVERSITY and the Bishop Museum, Honolulu, have entered into a new agreement which will bring about a closer affiliation of the two institutions.

The research program of the museum, the only institution which devotes its energies solely to a study of the Pacific area, will be integrated with the activities of those departments of the Yale Graduate School