

REPORTS

FEDERAL ALLOTMENTS FOR PUBLIC WORKS

SECRETARY OF THE INTERIOR HAROLD L. ICKES reports as Public Works Administrator that up to August 20, \$1,196,721,389 of the \$3,300,000,000 public works fund had been allotted. As many of the projects are of scientific interest the data are here given in full. They are as follows:

Farm Credit Administration (statutory).....	\$ 100,000,000
Tennessee Valley Authority (statutory).....	50,000,000
Highways (Agriculture) (statutory).....	400,000,000
Naval Construction (executive order).....	238,000,000
Public Works Administration (administrative).....	100,000
National Recovery Administration (administrative).....	630,000
Civilian Conservation Corps (executive order).....	20,000,000
Civilian Conservation Corps (executive order).....	20,000,000
National Arboretum (executive order).....	171,638
Great Smoky National Park (executive order).....	1,550,000
Subsistence Homesteads (statutory).....	25,000,000
Federal Power Commission.....	400,000
Re-employment Service, Department of Labor.....	500,000
Department of Agriculture (departmental).....	340,800
Agricultural Engineering.....	77,813
Animal Industry.....	549,240
Chemistry and Soils.....	33,919
Chemistry and Soils and Engineering.....	57,750
Dairy Industry.....	173,670
Entomology.....	15,150
Experiment Stations.....	4,950
Food and Drug Administration.....	70,000
Forest Highways.....	15,000,000
Forest Roads and Trails.....	10,000,000
Plant Industry.....	648,807
Plant Industry (erosion control nurseries).....	630,000
Forest Service (physical improvements).....	15,982,745
Plant Industry.....	2,830,000
Plant Quarantine.....	2,020,620
Plant Quarantine.....	58,050
Public Land Roads.....	5,000,000
Weather Bureau.....	20,000
Agricultural Engineering (soil erosion control).....	5,000,000
Commerce Department, Coast and Geodetic Survey.....	2,600,000
Aeronautics.....	443,000
Fisheries.....	150,000
Fisheries (five stations).....	150,000
Lighthouses.....	5,225,202
Navigation.....	30,000
Standards.....	100,000

Interior Department

Alaskan Railroad.....	\$ 210,008
Alaskan Road Commission.....	1,096,000
Columbia Institution for the Deaf.....	10,000
Freedmen's Hospital.....	85,000
Geological Survey (physical improvements).....	1,200,000
Geological Survey (surveys).....	2,500,000
Howard University.....	948,811
Indian Affairs (physical improvements).....	2,820,000
Indian Reservation Roads.....	4,000,000
National Park Service (physical improvements).....	1,250,000
Roads and Trails.....	16,000,000
Reclamation.....	44,460,000
Boulder Canyon.....	\$28,000,000
Machinery.....	10,000,000
Owyhee.....	5,000,000
Vale.....	1,000,000
Ellensburg.....	60,000
Ronald.....	400,000
Reclamation, Casper-Alcova.....	22,700,000
Grand Coulee, Columbia Basin.....	63,000,000
St. Elizabeth's Hospital.....	850,000
Virgin Islands.....	114,500
Additional National Park Service.....	6,000
Bureau of Reclamation.....	20,000
Department of Justice (construction).....	851,000
Department of Labor (immigration).....	1,344,480
Post Office (departmental).....	7,600
State Department, International Commission.....	26,500
State Department, International Commission (U. S.-Mexico).....	1,501,500
Treasury Department, Public Health Service.....	102,438
U. S. Marine Hospital, Staten Island.....	2,272,051
Supervising Architect (public buildings).....	6,971,648
" " " " " ".....	11,527,499
War Department, Flood Control.....	1,555,000
Ordnance.....	6,000,000
Flood Control.....	7,000,000
Rivers and Harbors (upper Mississippi).....	11,500,000
Corps of Engineers (seacoast defenses).....	6,000,000
Rivers and Harbors.....	8,000
Independent Offices, Arlington Bridge Commission.....	200,000
National Advisory Committee for Aeronautics.....	200,000
Panama Canal.....	1,000,000

Housing Projects

Neptune Gardens, Inc., Boston.....	3,500,000
Spence Estate Housing Corporation, Brooklyn.....	2,025,000
American Federation of Full-fashioned Hosiery Workers, Philadelphia.....	845,000
Dick-Meyer Corporation, New York.....	3,210,000

Suburban Housing Association, Hutchinson, Kansas	\$ 40,000
Triborough Bridge Authority, New York... (Loan, \$37,000,000; grant, \$7,200,000)	44,200,000
Total	\$1,196,721,389

DOCTORATES CONFERRED IN THE SCIENCES BY AMERICAN UNIVERSITIES, 1932-1933¹

IN assembling the data for the doctorates in the sciences conferred by American universities from year to year, a steady increase has been observed in the number granted, especially since 1919. The following figures for the past ten years summarize this trend: 1924, 611; 1925, 640; 1926, 748; 1927, 796; 1928, 842; 1929, 1,025; 1930, 1,074; 1931, 1,147; 1932, 1,241; 1933, 1,343.

From these totals it is seen that the so-called years of depression have had a stimulating effect upon higher education. The same fact is emphasized by the survey of graduate research students in chemistry, as shown by the statistics collected from about 130 American universities:² 1924, 1,700; 1925, 1,763; 1926, 1,882; 1927, 1,934; 1928, 2,081; 1929, 2,498; 1930, 2,795; 1931, 3,261; 1932, 3,348.

Each year it has seemed that the curve had reached a maximum and that the number of doctorates granted in the sciences must decrease. Apparently it is impossible at this time to predict whether this will happen, and if so, when.

This distribution of the doctorates by subjects shows no significant change last year, as compared with earlier years. The 1,343 doctorates granted in 1933 were distributed as follows: Chemistry, 417; physics, 123; zoology, 115; psychology, 101; botany, 79; mathematics, 78; engineering, 75; geology, 66; physiology, 39; agriculture and forestry, 36; bacteriology, 36; pathology, 23; anatomy, 17; entomology, 17; genetics, 15; horticulture, 15; anthropology, 13; pharmacy and pharmacology, 13; archeology, 10; astronomy, 10; geography, 10; public health, 10; medicine and surgery, 10; metallurgy, 9; paleontology, 6.

Each year there is a certain fluctuation in the number of doctorates granted by the various universities.

Thus, this year Cornell showed an increase of 30 over last year, while Chicago showed a decrease of 43; Michigan showed an increase of 26, Harvard, 18, Illinois, 17, California Institute of Technology, 15, Columbia, 13, etc. These differences from year to year are really of little importance, for next year the order may be entirely different; however, a survey of the data for the past ten years shows that those universities which grant 20 or more doctorates maintain about the same relative positions from one year to another.

The following figures show the number of doctorates granted by the various universities for the academic year 1932-1933: Cornell, 110; Wisconsin, 87; Michigan, 81; Chicago, 73; Columbia, 71; Johns Hopkins, 68; Harvard, 63; Illinois, 63; California, 62; Minnesota, 62; Ohio State, 53; Yale, 50; Iowa, 48; California Institute of Technology, 36; Princeton, 32; Iowa State University, 31; Massachusetts Institute of Technology, 30; Pennsylvania, 24; New York, 21; Pittsburgh, 20; Stanford, 18; Northwestern, 17; Texas, 16; Washington University (St. Louis), 12; Duke, 11; Indiana, 11; Brown, 10; Cincinnati, 10; Maryland, 10; Pennsylvania State College, 10; Kansas, 8; Missouri, 8; Notre Dame, 7; Purdue, 7; Radcliffe, 7; Washington, 7; Catholic, 6; George Washington, 6; Nebraska, 6; North Carolina, 6; Colorado, 5; Michigan State College, 5; Rensselaer, 5; Rochester, 5; Virginia, 5; Western Reserve, 5; Clark, 4; Lawrence, 4; Rice, 3; Rutgers, 3; Vanderbilt, 3; American, 2; Boston, 2; Fordham, 2; George Peabody, 2; Oregon, 2; St. Louis, 2; Arizona, 1; Georgetown, 1; New York State College of Forestry, 1; State College of Washington, 1; Syracuse, 1; Tulane, 1.

Detailed data regarding the 1,343 doctorates granted in 1932-1933, giving the names of the recipients of the degrees and the titles of the theses, together with comparative statistics for the past ten years, will be found in *Reprint and Circular Series* of the National Research Council, No. 105. Earlier numbers of this series, containing such data for previous years, are: 26, 42, 75, 80, 86, 91, 95, 101 and 104.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

A DEVICE FOR MEASURING INTENSITY OF ILLUMINATION

A TIMELY article by Nicholas,¹ calling attention to

¹ See SCIENCE, 72: 357 (1930), 74: 659 (1931), 76: 296 (1932) for a survey of the data on doctorates from 1898 to 1932.

² See *Jour. Chem. Education*, 10: 499 (1933) for further details of this study.

¹ SCIENCE, 78: 38-39, 1933.

the economies that may be effected without loss of efficiency for animal work, prompts the writers to call attention to a home-made equipment for measuring intensity of illumination, in connection with plant work, which costs less than one third the amount asked by professional supply houses for a similar equipment.

The materials consist essentially of one Weston