

EIGHTH ANNUAL REPORT

OF THE

SECRETARY OF COMMERCE AND LABOR

1910



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EIGHTH ANNUAL REPORT
OF THE
SECRETARY OF COMMERCE AND LABOR.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, November 23, 1910.

To the PRESIDENT:

I have the honor to submit my second annual report.

This Department has only a few features which are common to all the bureaus and divisions embraced in it. It will be necessary, therefore, to deal with the several branches under their respective heads. The report will for the same reason be more extended than I had hoped to make it.

The entire force of employees at the end of the fiscal year (not counting about 71,500 enumerators and a temporary force of 3,496 in the Bureau of the Census) numbered 10,258, which is an increase of 327 over the previous year. This increase appears chiefly in the Census, Fisheries, and Immigration and Naturalization bureaus. It is to be explained by the fact that the Bureau of the Census, in view of its increased work, necessarily had to employ a larger permanent force; the Bureau of Fisheries was directed to take over the seal herds, and became responsible for the protection of the natives on the Pribilof Islands, which called for a larger force; and immigration has increased to such an extent that the force in this service had to be correspondingly enlarged. A few of the bureaus have reduced their forces. Most of them have, however, had slight increases, to be attributed as a rule to the new work provided for by legislation. Estimates for appropriations will be correspondingly increased.

An examination of that part of the report relating to appointments will show that the Department's force as a whole is very satisfactory. A number of incapable employees have been dropped. The spirit of the personnel is good, interest and even enthusiasm being manifested. Furthermore, it is shown that the important appointments without the classified service have been made with a view to merit. Three chiefs of bureaus, as well as a number of other important presidential appointments during this administration, have been

selected from the classified service on account of experience and attainments, and because of apparent fitness for the positions to be filled.

During the last year some important changes have been made by acts of Congress. Four acts relate to matters under the jurisdiction of the Bureau of Navigation, one of them being the provision for a wireless system for passenger-carrying steamers and another the law relating to motor boats. The activities of the Bureau of Standards have been enlarged. The Bureau of the Census has carried out the provisions of the Thirteenth Decennial Census act. The Bureau of Fisheries has made arrangements for the protection of the natives on the Pribilof Islands, has taken over the control of seal herds, and has secured sealskins which it is estimated will increase the Government's income from that source at least threefold, making provision at the same time for more perfect conservation of the herds than in former years. The Light-House Service has been completely reorganized. The districts have been increased from 16 to 19, and Alaska, Hawaii, and Porto Rico have been made separate districts. By concentrating the district offices and their forces, and by dispensing with the construction of some ships—for the present at least—it is expected to make a very substantial saving in the administration cost and to improve the efficiency of this Service.

Among the subjects discussed in this report the following may warrant particular attention:

The application of the merit system of promotion of employees.

The recommendation, under the heading "Division of Publications," to allow a more general sale of publications issued by the several bureaus.

The recommendations submitted in connection with the section devoted to the Bureau of Immigration and Naturalization. They refer more especially to improvements at immigrant stations, to the discontinuance of the use of jails for detention purposes, to the needed additions at Ellis Island unless immigration at that point is reduced or is diverted from it, to imposing fines on steamship companies for bringing aliens afflicted with insanity or contagious diseases, to the regulation and control of employees of steamship companies who seek to land without examination, to a provision for placing, for purposes of observation, inspectors and perhaps physicians on board the steamships carrying large numbers of immigrants, and to the question how immigrant families, some of whom are admissible and some of whom under the present reading of the law must be rejected, are to be dealt with.

The suggestion that appeals be allowed in naturalization cases so as to secure harmony in court decisions.

The reports made by the Bureau of Corporations, more especially the lumber report, which is substantially ready for submission.

The recommendation, in connection with the Bureau of Labor, for amendments to the government workmen's compensation act, and the report on woman and child labor, which has been completed.

The recommendation for a larger appropriation for commercial agents in the Bureau of Manufactures.

The condition and needs of our foreign trade as presented in connection with the statistics supplied by the Bureau of Statistics.

The illustrations of a wholesome cooperation between the National Government and State authority furnished by the Bureau of Standards in the enforcement of the standards of weights and measures.

The recommendation in connection with the Bureau of Fisheries for wireless stations at points on the Aleutian Islands and the Pribilof Islands, and the suggestion that some of the Aleutian Islands be made reservations for the protection of fur-bearing animals.

The completion and operation of a tide-predicting machine in the Coast and Geodetic Survey, not only because of its practical value, but as an illustration of this class of development in a scientific bureau.

The recommendation that the force of the Steamboat-Inspection Service be increased sufficiently to secure proper supervision over the number of persons carried by passenger steamers; and the recommendation for a more perfect hull inspection.

The very substantial saving and the improved service secured by the reorganization of the Light-House Service.

The growing importance of the early consideration of measures looking to the rehabilitation of the American merchant marine.

The successful employment in the Bureau of the Census of several types of new machines, and the application of examination tests in the selection of some 71,500 enumerators.

Finally, I recommend that another Assistant Secretary be authorized for this Department. The activities of the twelve bureaus are so varied that it is extremely difficult for two men to exercise the supervision which the work requires and to give the time for consultations to which chiefs of the bureaus are entitled. Furthermore, the provision of the law which brings every immigration appeal case and every deportation case to the desk of the Secretary, and requires him or his Assistant to pass on the record so presented, practically absorbs the attention of either the Secretary or his Assistant, so that to all intents and purposes only one of them is free to devote his time to the general work of the Department.

OFFICE OF THE SECRETARY.

OFFICE OF THE CHIEF CLERK.

The most important task accomplished during the year has been the acquisition of comparatively satisfactory rented quarters for the several bureaus of the Department. In view of the recent action of Congress with respect to the proposed new federal building for this Department, it is believed that the quarters now occupied by the Secretary's Office in the Willard Building, and by other branches of the service in the Adams Building (1333-1335 F street) and the Annex (462-464 Louisiana avenue), will be adequate, with small additions, until the proposed new building is ready for occupancy, and that in the meantime the rent appropriation of \$50,000 will not need to be increased.

During the fiscal year 1910 the Department secured the five upper floors of the Adams Building, and the Division of Naturalization, the Bureau of Statistics, and the Bureau of Manufactures have, for the present, ample space in the building in question. The Department now has control of the entire building above the first floor, including the elevator service.

Space in the Kellogg Building (1416 F street), at \$510 per annum, occupied by the files of the Division of Chinese Records, was vacated on May 1 last, and these files were moved on that date to rooms on the second floor of the Adams Building.

The Division of Naturalization was moved from rooms in the Munsey Building, rented at the rate of \$4,300 per annum, to the sixth floor of the Adams Building on February 1, 1910, with a resulting saving in rent of over \$2,000 per annum.

The Bureau of Labor moved from the National Savings and Trust Company's building at Fifteenth street and New York avenue on July 31, 1909, and now occupies the second and third floors of the Annex. The rental in the trust company's building was at the rate of \$7,500 per annum.

On March 1 the Department stable was moved from unsatisfactory quarters on Seventeenth street, at \$1,500 a year, and now occupies a newly constructed sanitary brick and concrete structure between M and N and Ninth and Tenth streets NW., the rental for this branch of the Department having been increased to \$1,800 a year.

Space which was under rental at \$1,500 per annum in the basement of the Merchants Transfer and Storage Company's building on E street was vacated on April 1, 1910, and a very satisfactory storage building has been secured at 470 Louisiana avenue. This building is ample in size to provide storage space for the entire Department and the rental is at the rate of \$2,400 per annum.

The average rental per square foot now paid by the Department and charged to the appropriation for rent is about 35 cents, and the total charge on the appropriation is \$46,042. The total area of the rented quarters named is slightly in excess of 130,000 square feet. Other branches of the service, including the Census Bureau, the Coast and Geodetic Survey, the Bureau of Fisheries, and the Bureau of Standards, occupy between 400,000 and 500,000 square feet additional.

During the year the quarters in the Willard Building occupied by the Office of the Secretary, the Assistant Secretary, and the Chief Clerk were painted and improved electric-lighting equipment was installed. Contracts were also made for the painting and renovation of the halls and rooms in the Annex. It is expected that a balance of about \$2,000 will be turned back to the Treasury from the appropriation for rent.

During the year material additions were made to the equipment of the Department, new desks, adding machines, computing machines, and other labor-saving devices having been purchased. A deficiency appropriation of \$7,000 for contingencies was secured to provide for the additional charges imposed upon the Department by the transfer of field officers to the Division of Naturalization on July 1, 1909.

In general, the quarters and equipment of the Department were in fairly satisfactory condition on July 1, 1910.

DISBURSING OFFICE.

The itemized statement of the disbursements from the contingent fund of the Department of Commerce and Labor and the appropriation for "General expenses, Bureau of Standards," for the fiscal year ended June 30, 1910, required to be submitted to Congress by section 193 of the Revised Statutes of the United States; the itemized statement of expenditures under all appropriations for propagation of food fishes during the fiscal year ended June 30, 1910, required by the act of Congress approved March 3, 1887 (24 Stat. L., 523), and a statement showing travel on official business by officers and employees (other than the special agents, inspectors, and employees in the discharge of their regular duties who are required to travel constantly) from Washington to points outside of the District of Columbia during the fiscal year ended June 30, 1910, as required by the act of Congress approved May 22, 1908 (35 Stat. L., 244), will be transmitted to Congress in the usual form.

The following table shows the total amounts of all annual appropriations for the various bureaus and services of the Department of Commerce and Labor for the fiscal year ended June 30, 1910, of all appropriations made for public works in the various services of the Department, which, under the law, may be disbursed without regard to any particular year, and of all permanent indefinite appropriations:

Object of appropriation.	Annual appropriations, 1910.	Appropriations for public works.	Permanent indefinite appropriations.	Total.
Office of the Secretary of Commerce and Labor.....	\$272,540.00	.....	.....	\$272,540.00
Bureau of Corporations.....	284,120.00	.....	.....	284,120.00
Bureau of Manufactures.....	82,700.00	.....	.....	82,700.00
Bureau of Labor.....	172,570.00	.....	.....	172,570.00
Light-House Board.....	48,720.00	.....	.....	48,720.00
Light-House Establishment.....	5,491,800.00	.....	.....	5,491,800.00
Construction of oil houses, etc.....	.....	\$22,000.00	.....	22,000.00
Bureau of the Census.....	10,140,000.00	.....	.....	10,140,000.00
Bureau of Statistics.....	74,110.00	.....	.....	74,110.00
Office of Supervising Inspector-General, Steamboat- Inspection Service.....	14,440.00	.....	.....	14,440.00
Steamboat-Inspection Service.....	.....	.....	\$513,725.68	513,725.68
Bureau of Navigation.....	32,380.00	.....	.....	32,380.00
Shipping Service.....	12,280.00	.....	66,201.23	78,481.23
Refunding penalties or charges erroneously exacted.....	.....	.....	10,305.42	10,305.42
Bureau of Immigration and Naturalization.....	2,591,160.00	.....	.....	2,591,160.00
Immigrant stations, Ellis Island and Boston.....	.....	291,350.00	.....	291,350.00
Bureau of Standards.....	385,780.00	.....	.....	385,780.00
Coast and Geodetic Survey.....	960,290.00	.....	.....	960,290.00
Bureau of Fisheries.....	880,790.00	.....	.....	880,790.00
Construction of fish hatcheries.....	.....	92,700.00	.....	92,700.00
Miscellaneous expenses:				
Judgments, United States courts.....	3,364.81	.....	.....	3,364.81
Refunds, trust funds, etc.....	4,195.00	.....	.....	4,195.00
Total.....	21,421,209.81	406,050.00	590,232.33	22,417,492.14

* Includes \$2,400,000 "Expenses of regulating immigration," formerly a permanent indefinite appropriation.

† Includes \$130,000 for testing machine, available until expended.

‡ Includes \$150,000 for protecting seal fisheries of Alaska.

The disbursements by the Disbursing Clerk of the Department of Commerce and Labor during the fiscal year ended June 30, 1910, arranged according to items of appropriation and fiscal periods of accounting are as follows:

Bureau and title of appropriation.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
OFFICE OF THE SECRETARY.					
Salaries, Office of Secretary of Commerce and Labor, 1909.....	\$6,441.71	.....	.....	.....	\$6,441.71
Salaries, Office of Secretary of Commerce and Labor, 1910.....	31,333.46	\$36,320.35	\$38,115.67	\$38,450.02	144,219.50

Bureau and title of appropriation.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
OFFICE OF THE SECRETARY—cont'd.					
Contingent expenses, Department of Commerce and Labor, 1908.....	\$0.80	\$0.96	.....	.....	\$1.76
Contingent expenses, Department of Commerce and Labor, 1909.....	13,178.47	8,716.23	\$254.07	\$20.94	22,169.71
Contingent expenses, Department of Commerce and Labor, 1910.....	8,878.57	21,530.15	30,145.79	41,516.07	102,070.58
Rent, Department of Commerce and Labor, 1909.....	5,006.02	200.00	.....	.....	5,206.02
Rent, Department of Commerce and Labor, 1910.....	8,347.12	11,536.54	10,949.67	11,079.44	41,912.77
Payment to Thos. Windridge et al.....	2,000.00	.....	.....	.....	2,000.00
Payment to William Black.....	500.00	.....	.....	.....	500.00
Total.....	.....	.....	.....	.....	324,522.05
BUREAU OF CORPORATIONS.					
Salaries, Bureau of Corporations, 1909.....	3,218.08	.....	.....	.....	3,218.08
Salaries, Bureau of Corporations, 1910.....	14,938.39	19,302.83	19,248.38	19,383.00	72,872.59
Salaries and expenses, special attorneys, examiners, etc., Bureau of Corporations, 1909.....	5,748.72	106.47	.....	.....	5,855.19
Salaries and expenses, special attorneys, examiners, etc., Bureau of Corporations, 1910.....	27,137.22	30,837.75	28,157.82	29,078.43	115,211.22
Total.....	.....	.....	.....	.....	197,157.08
BUREAU OF MANUFACTURES.					
Salaries, Bureau of Manufactures, 1909.....	1,416.70	.....	.....	.....	1,416.70
Salaries, Bureau of Manufactures, 1910.....	6,553.31	8,614.77	8,551.11	8,497.50	32,216.69
Collating tariffs of foreign countries, 1909.....	304.65	.....	.....	.....	304.65
Collating tariffs of foreign countries, 1910.....	1,562.49	1,755.82	977.23	2,067.53	6,363.06
Salaries and expenses, special agents, Department of Commerce and Labor, 1909.....	172.31	.56	.....	.....	172.87
Salaries and expenses, special agents, Department of Commerce and Labor, 1910.....	620.00	24.10	2.95	9.79	656.84
Total.....	.....	.....	.....	.....	41,130.81
BUREAU OF LABOR.					
Salaries, Bureau of Labor, 1909.....	4,370.18	.....	.....	.....	4,370.18
Salaries, Bureau of Labor, 1910.....	21,584.44	26,022.75	25,972.56	26,052.99	99,632.74
Miscellaneous expenses, Bureau of Labor, 1908.....	.....	2,000.00	.....	.....	2,000.00
Miscellaneous expenses, Bureau of Labor, 1909.....	3,919.70	1,833.22	.....	.....	5,752.92
Miscellaneous expenses, Bureau of Labor, 1910.....	14,646.09	13,976.98	14,368.15	14,624.27	57,645.49
Library, Bureau of Labor, 1909.....	121.54	98.69	.....	.....	220.23
Library, Bureau of Labor, 1910.....	128.10	125.08	280.69	212.53	746.40

Bureau and title of appropriation.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
BUREAU OF LABOR—continued.					
Investigating the condition of woman and child workers, 1909.....	\$363.17	.....	.....	.....	\$363.17
Investigating the condition of woman and child workers, 1909-10.....	3,098.50	\$176.90	.....	\$0.31	3,275.71
Total.....	.....	.....	.....	.....	174,006.84
BUREAU OF STANDARDS.					
Salaries, Bureau of Standards, 1909...	5,856.04	.....	.....	.....	5,856.04
Salaries, Bureau of Standards, 1910...	32,947.18	40,333.03	\$40,687.82	40,081.90	153,949.93
Equipment, Bureau of Standards, 1909.....	2,337.98	7,006.28	.....	41.45	10,385.71
Equipment, Bureau of Standards, 1910.....	6,114.26	11,810.56	8,550.73	8,099.31	34,574.86
General expenses, Bureau of Standards, 1909.....	363.94	74.58	.....	.....	438.52
General expenses, Bureau of Standards, 1910.....	1,635.63	2,313.62	4,979.88	5,162.57	14,091.70
Improvement and care of grounds, Bureau of Standards, 1909.....	1,308.93	.....	.....	.....	1,308.93
Improvement and care of grounds, Bureau of Standards, 1910.....	545.16	740.78	622.85	745.78	2,654.57
Laboratory, Bureau of Standards.....	35,609.33	31,822.74	27,815.56	4,767.92	100,075.55
Testing machine, Bureau of Standards.....	10,433.63	25,408.99	7,921.40	26,407.13	70,170.85
Gas-light standards, Bureau of Standards, 1910.....	1,444.64	2,211.48	2,276.15	2,690.56	8,612.83
Weights and measures, Bureau of Standards, 1910.....	865.86	1,823.74	2,221.57	2,037.79	6,948.96
Total.....	.....	.....	.....	.....	409,008.45
LIGHT-HOUSE BOARD.					
Salaries, Office of Light-House Board, 1909.....	1,865.30	48.89	.....	.....	1,914.19
Salaries, Office of Light-House Board, 1910.....	9,476.46	11,879.00	11,930.00	12,091.42	45,376.88
Total.....	.....	.....	.....	.....	47,291.07
BUREAU OF IMMIGRATION AND NATURALIZATION.					
Salaries, Bureau of Immigration and Naturalization, 1909.....	4,145.51	.....	.....	.....	4,145.51
Salaries, Bureau of Immigration and Naturalization, 1910.....	20,783.75	26,115.83	26,030.84	25,538.89	96,469.31
Expenses of regulating immigration (special fund).....	220,682.96	14,321.04	44,137.68	42,850.22	321,991.90
Expenses of regulating immigration, 1910.....	400,164.85	555,286.91	617,523.37	590,223.38	2,163,297.51
Enforcement of the Chinese-exclusion act, 1909.....	36,419.51	2,304.01	.....	.....	38,723.52
Immigrant station, Boston, Mass.....	.....	.....	.....	34,000.60	34,000.00
Immigrant station, Ellis Island, N. Y. (special fund).....	44,802.98	32,237.86	33,804.75	15,513.45	126,358.04

Bureau and title of appropriation.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
BUREAU OF IMMIGRATION AND NATURALIZATION—cont'd.					
Immigrant station, Ellis Island, N. Y., 1910.....		\$90.55	\$16,231.10	\$61,533.52	\$77,845.17
Immigrant station, Philadelphia, Pa.....				100,000.00	100,000.00
Immigrant station, San Francisco, Cal.....	\$668.75	802.33	5,139.19	16,310.00	23,120.32
Ferry steamer, San Francisco, Cal.....			13.91	23.18	37.09
Special examiners, etc., Division of Naturalization, 1910.....	16,832.87	23,786.61	26,513.78	29,879.54	97,012.80
Additional assistants to clerks of courts in naturalization cases, 1910.....		233.34	1,087.91	5,820.55	6,891.80
Total.....					3,091,893.97
STEAMBOAT-INSPECTION SERVICE.					
Salaries, Office of Supervising Inspector-General, Steamboat-Inspection Service, 1909.....	601.69				601.69
Salaries, Office of Supervising Inspector-General, Steamboat-Inspection Service, 1910.....	2,999.98	3,571.67	3,610.00	3,610.00	13,791.65
Salaries, Steamboat-Inspection Service.....	107,227.48	106,810.41	106,724.30	106,691.38	427,453.57
Contingent expenses, Steamboat-Inspection Service.....	26,307.86	19,600.16	15,024.86	21,731.06	82,663.94
Total.....					524,510.85
BUREAU OF STATISTICS.					
Salaries, Bureau of Statistics, 1909.....	2,921.37				2,921.37
Salaries, Bureau of Statistics, 1910.....	14,280.93	17,256.32	17,374.86	17,430.00	66,351.11
Collecting statistics relating to commerce, 1909.....	280.80	15.27			296.16
Collecting statistics relating to commerce, 1910.....	823.05	838.33	1,062.10	1,008.75	3,722.23
Total.....					73,290.87
BUREAU OF NAVIGATION.					
Salaries, Bureau of Navigation, 1909.....	1,349.21				1,349.21
Salaries, Bureau of Navigation, 1910.....	6,678.29	8,022.78	7,923.33	8,095.00	30,719.40
Contingent expenses, Shipping Service, 1909.....	1,350.08	.06			1,350.14
Contingent expenses, Shipping Service, 1910.....	424.25	1,933.19	1,792.31	1,620.27	5,770.02
Salaries, Shipping Service.....	10,801.66	11,274.75	10,644.94	11,871.28	44,592.63
Total.....					83,781.40
BUREAU OF FISHERIES.					
Salaries, Bureau of Fisheries, 1909.....	19,508.85				19,508.85
Salaries, Bureau of Fisheries, 1910.....	53,544.38	73,213.80	74,282.49	76,089.37	277,080.04
Miscellaneous expenses, Bureau of Fisheries, 1909.....	68,175.22	1,768.26	63.23	231.37	60,238.08
Miscellaneous expenses, Bureau of Fisheries, 1910.....	49,065.79	87,107.71	62,901.65	81,170.55	280,245.70

Bureau and title of appropriation.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
BUREAU OF FISHERIES—continued.					
Biological station, Mississippi River Valley.....	\$233. 21	\$196. 38	\$5, 175. 64	\$5, 976. 45	\$11, 580. 68
Salaries, agents at salmon fisheries in Alaska, 1910.....		520. 83	874. 99	625. 00	2, 020. 83
Salaries, agents at seal fisheries in Alaska, 1908.....	608. 34				608. 34
Salaries, agents at seal fisheries in Alaska, 1909.....	3, 400. 00	2, 676. 67	240. 00		6, 316. 67
Salaries, agents at seal fisheries in Alaska, 1910.....	973. 33	1, 551. 25	1, 368. 75	1, 307. 91	5, 201. 24
Protecting seal fisheries of Alaska.....				6, 788. 04	6, 788. 04
Supplies for native inhabitants of Alaska, 1909.....	5, 700. 00		13, 777. 32		19, 477. 32
Supplies for native inhabitants of Alaska, 1910.....				2, 745. 70	2, 745. 70
Repairs to public buildings, Pribilof Islands, Alaska, 1910.....			2, 985. 62		2, 985. 62
Fish hatcheries, Alaska.....	1, 425. 01	606. 75			2, 031. 76
Fish hatcheries, Puget Sound, Wash.....		78. 85	290. 74		369. 59
Fish hatchery, Boothbay Harbor, Me.....	4, 696. 58	2, 800. 42	16. 25	917. 39	8, 490. 64
Fish hatchery, Cold Springs, Ga.....	52. 42	178. 30	100. 81	16. 41	347. 94
Fish hatchery, Duluth, Minn.....	868. 19	3, 320. 91	1, 585. 00	1, 181. 40	6, 955. 50
Fish hatchery, Green Lake, Me.....		3, 014. 87	140. 11	323. 81	3, 478. 79
Fish hatchery, Lake County, Colo.....		1, 368. 58	170. 11	15. 72	1, 554. 41
Fish hatchery, Mammoth Spring, Ark.....	39. 00	2, 881. 58	1, 064. 52	2, 531. 49	6, 516. 59
Fish hatchery, Montana.....	46. 50	165. 50	29. 08	1, 325. 43	1, 566. 51
Fish hatchery, Put-in-Bay, Ohio.....		11. 59	3. 35	14, 965. 65	14, 980. 59
Fish hatchery, Tennessee.....	10. 40	250. 00	4, 332. 65	1, 712. 18	6, 305. 23
Fish hatchery, upper Mississippi River Valley.....		5, 300. 00	86. 85	3, 135. 81	8, 522. 66
Fish hatchery, Vermont.....	16. 80	5, 403. 50	8. 15		5, 428. 45
Fish hatchery, Wytheville, Va.....	33. 16				33. 16
Total.....					761, 369. 92
Grand total.....	1, 417, 198. 18	1, 335, 798. 75	1, 388, 066. 59	1, 587, 599. 79	5, 728, 623. 31

The following statement shows the expenditures during the fiscal year ended June 30, 1910, on account of all appropriations under the control of the Department of Commerce and Labor, giving the total amounts disbursed by the various disbursing officers of the Department and miscellaneous receipts for the same period:

By the Disbursing Clerk, Department of Commerce and Labor, on account of salaries and expenses of the Office of the Secretary of Commerce and Labor, the Bureaus of Corporations, Manufactures, Labor, Statistics, Navigation, Immigration and Naturalization, Standards, and Fisheries, the Light-House Board, the Office of the Supervising Inspector-General, Steamboat-Inspection Service, expenses of regulating immigration, salaries and expenses of Steamboat-Inspection Service at large, and public works of the Immigration and Fisheries services (shown in detail in foregoing table of disbursements)..... \$5, 728, 623. 31

By the engineer and naval secretaries of the Light-House Board, engineers and inspectors detailed from the Army and Navy to duty in the Light-House Establishment, and all other officers who disbursed money for the Light-House Establishment.....	\$5,565,415.24
By the disbursing clerk, Bureau of the Census, on account of salaries and expenses of the Bureau of the Census.....	4,451,722.91
By the special disbursing agent, Coast and Geodetic Survey, on account of salaries and expenses of the Coast and Geodetic Survey....	943,230.62
By the special disbursing agents of the Immigration Service.....	33,170.98
By the special agents of the Department investigating trade conditions abroad, as special disbursing agents.....	29,080.93
By customs officers on account of witnesses' fees in steamboat investigations.....	631.15
By special disbursing agents, Bureau of Fisheries.....	31,912.21
By special disbursing agents, Bureau of the Census.....	48,420.55
By special disbursing agents, Bureau of Corporations.....	5,467.15
By special disbursing agent, Steamboat-Inspection Service.....	93.90
By warrants drawn on the Treasurer of the United States to satisfy accounts settled by the Auditor for the State and other Departments.	375,937.74
Total.....	17,213,706.69

MISCELLANEOUS RECEIPTS, FISCAL YEAR 1910.

Coast and Geodetic Survey:	
Sale of Charts, Coast Pilots, and Tide Tables.....	\$12,707.83
Sale of property, outside work, etc.....	1,454.64
Bureau of Standards: Standardizing and testing weights, etc.....	6,951.89
Bureau of Immigration and Naturalization:	
Head tax.....	4,164,966.43
Exclusive privileges.....	13,638.47
Naturalization fees.....	181,540.15
Bureau of Navigation: Navigation fees.....	135,249.72
Bureau of Fisheries: Sale of sealskins.....	153,375.00
Bureau of the Census:	
Transcripts of census records.....	60.00
Sales of publications.....	1,023.10
Light-House Establishment:	
Proceeds of sale of condemned property, damages, rentals, etc....	7,186.87
Sale of reservations.....	5,498.90
Proceeds of sale of condemned property, exclusive of Light-House Establishment.....	5,504.78
	<u>4,689,157.78</u>
Other receipts:	
Tonnage tax.....	1,081,526.70
Collected and paid into "trust fund".....	111.93
	<u>1,081,638.63</u>
Total.....	5,770,796.41

APPOINTMENT DIVISION.

The following table shows by bureaus the number of positions in the service of the Department on July 1, 1910, and the increase or decrease in each bureau as compared with July 1, 1909:

Bureau.	Statu- tory.	Non- statu- tory.	In Dis- trict of Colum- bia.	Outside District of Co- lumbia.	Total.	In- crease.	De- crease.
Office of the Secretary.....	137	.....	137	.....	137	.....	.....
Bureau of Manufactures.....	29	11	33	7	40	3	.....
Bureau of Corporations.....	65	54	119	.....	119	.....	1
Bureau of Labor.....	80	31	111	.....	111	.....	14
Bureau of Light-Houses.....	45	5,444	53	5,436	5,489	7	.....
Bureau of the Census.....	43	1,483	753	773	* 1,526	172	.....
Coast and Geodetic Survey.....	242	104	203	143	346	.....	2
Bureau of Statistics.....	55	2	57	.....	57	.....	1
Steamboat-Inspection Service.....	111	151	9	253	262	1	.....
Bureau of Fisheries.....	357	4	78	283	361	20	.....
Bureau of Navigation.....	23	52	23	52	75	.....	1
Bureau of Immigration and Naturalization.....	85	1,477	90	1,472	1,562	109	.....
Bureau of Standards.....	161	12	173	.....	173	34	.....
Total.....	1,433	8,825	1,839	8,419	10,258	346	19

* Does not include the following employees who were appointed during the Thirteenth Decennial Census period and were on duty at the close of June 30, 1910: 330 supervisors, 990 special agents, 1,842 clerks, 23 subclerks, 313 temporary employees limited to 60 days (total 3,496); also approximately 71,500 enumerators, who completed their work prior to the date mentioned.

† Net increase, 327.

Information in detail respecting the items given in this table will be found in the annual report of the Chief of the Appointment Division.

PRESIDENTIAL POSITIONS.

The foregoing table includes the presidential positions of the Department, which are as follows:

Assistant Secretary.	Superintendent of the Coast and Geodetic Survey.
Chief of the Bureau of Manufactures.	Supervising Inspector-General, Steamboat-Inspection Service.
Commissioner of Corporations.	10 supervising inspectors of steam vessels.
Deputy Commissioner of Corporations.	Commissioner of Fish and Fisheries.
Commissioner of Labor.	Agent for the protection of the salmon fisheries of Alaska.
Commissioner of Light-Houses.	Assistant agent for the protection of the salmon fisheries of Alaska.
Deputy Commissioner of Light-Houses.	Commissioner of Navigation.
Chief constructing engineer, Bureau of Light-Houses.	Commissioner-General of Immigration.
Superintendent of naval construction, Bureau of Light-Houses.	7 commissioners of immigration.
Director of the Census.	Director of the Bureau of Standards.
Assistant Director of the Thirteenth Decennial Census.	

During my incumbency the following presidential appointments have been made:

Assistant Secretary.
 Deputy Commissioner of Corporations.
 Director of the Census.
 Assistant Director of the Thirteenth Decennial Census.
 Commissioner of Fish and Fisheries.
 Commissioner of immigration at the port of New York, N. Y.
 Commissioner of immigration at the port of Philadelphia, Pa.
 Commissioner of immigration at the port of Baltimore, Md.
 Commissioner of immigration at the port of Boston, Mass.

Commissioner of immigration at the port of San Francisco, Cal.
 Commissioner of immigration at the port of Seattle, Wash.
 Chief of the Bureau of Manufactures.
 Commissioner of Light-Houses.
 Deputy Commissioner of Light-Houses.
 Chief constructing engineer, Bureau of Light-Houses.
 Superintendent of naval construction, Bureau of Light-Houses.

In six instances former incumbents of the positions were reappointed. In two instances persons outside of the service were selected on account of their well-known qualifications. In the remaining eight instances selections were made of persons who had been previously employed in the classified service. Thus, it will be seen that with respect to the positions which are entirely divorced from the civil-service system political considerations have been eliminated and the merit system installed.

THIRTEENTH DECENNIAL CENSUS.

Approximately 2,500 to 3,000 temporary clerks and subclerical employees will be employed during the census period ending June 30, 1912. The length of service of such appointees will range from six months to two years and will average one year. The collection of the statistics of manufactures, mines, and quarries required the employment of between 1,200 and 1,300 special agents, while the enumeration of the census of population and agriculture required the employment of approximately 71,500 enumerators.

The Department has put into operation a plan for the promotion of the clerks appointed from the special census registers. Promotion in accordance with this plan, as well as separation from the service as the needs of the Bureau demand, will depend upon the length of service and the efficiency of the employees as reported monthly by the division chiefs.

APPOINTMENTS BY SPECIAL EXCEPTION TO THE CIVIL-SERVICE RULES.

The civil-service law and rules provide and declare that "as nearly as the conditions of good administration will warrant" open competitive examinations shall be held for testing the fitness of applicants for positions in the public service. The law and rules recognize the

probable necessity for exceptions in certain cases, and in order that proper publicity may be given them, thus in a measure forestalling possible abuses, it is required that these exceptions be set forth in connection with the rules, and the reasons therefor stated in the annual reports of the Civil Service Commission. Special exceptions in this Department are restricted to appointments to positions requiring peculiar qualifications with respect to knowledge and ability, or scientific, technical, or special attainments, which could not be fairly tested by the usual competitive course. During the fiscal year ended June 30, 1909, nine executive orders affecting directly the personnel of the Department were promulgated. During the past year there were only five such orders.

APPORTIONMENT OF APPOINTMENTS AMONG THE SEVERAL STATES AND TERRITORIES.

It is generally conceded that although far from being perfect the present civil-service method of securing employees possessing proper qualifications for the performance of the work required by the Government is the best system that has yet been devised for the purpose, but there are many restrictions imposed by law, rule, or regulation which do not make for efficiency and economy in administration. The provision of law requiring that appointments in the departments at Washington shall be apportioned among the several States and Territories and the District of Columbia upon the basis of population may well be cited as an illustration. It is very doubtful whether the benefits of this particular provision of law outweigh its manifest disadvantages. While the civil-service tests undoubtedly furnish the best guaranty for appointment upon merit, the demand for geographical distribution necessarily restricts the freedom of choice. For some reasons it may be desirable to have the employees of the civil branch of the Government represent the various States and sections of the country, but it is a question whether such a policy is of sufficient importance to outweigh the tests which the law provides to determine the merits and qualifications of applicants. If the service is to be maintained on that high plane of efficiency which is so urgently demanded, it seems only fair to grant to the departments the privilege of selecting the persons who have attained the highest marks on examination, and not be compelled to consider eligibles with poor markings simply because they claim legal residence in States whose quotas are not in excess.

EFFICIENCY OF THE PERSONNEL.

The investigation into the efficiency of the personnel which was instituted in 1909 is now practically closed. Its scope, the manner in which it was conducted, and the great variety of conditions presented

were considered in the last annual report. In order that the results of the investigation might be more fully understood, the Department during the latter part of October, 1909, addressed communications to its bureau officers requesting an expression of their views as to what, if any, had been the effect of the investigation and the resulting readjustment of salaries, or other action, in the cases of the employees who had been reported as being below the required standard. Practically all of these officers were of opinion that the results had been far-reaching and highly beneficial. On April 15, 1910, the Department addressed letters to its bureau officers, stating that it would not undertake immediately another general inquiry into the efficiency of the personnel, but requesting that they report such cases of inefficiency then existing as might require separation, reduction, or other disciplinary action. Fourteen such cases have thus far been reported and appropriate action has been taken.

The original investigation, in so far as it affected the personnel of the Department, resulted in 7,119 efficiency reports being received, of which 1,023 indicated that employees might be below the required standard of efficiency. Upon thorough and critical examination of the reports indicating delinquencies on the part of employees, it was decided that in 382 cases no disciplinary or other action was required, while the remaining 641 cases were disposed of as follows:

Dismissed.....	30	Cautioned, warned, admonished, or	
Resignation accepted.....	39	reprimanded.....	357
Services discontinued.....	29	Furloughed.....	1
Demoted.....	147	Still pending.....	11
Transferred.....	12		—
Transferred and demoted.....	15	Total.....	641

While the efficiency reports were being considered it was discovered that in a number of cases the employees had rendered long and faithful service, in some instances both military and civil, and that the inefficiency was due to causes for which the employees were not responsible. It is not unlikely that the bureau officers were somewhat reluctant about rating these persons solely upon their ability to render the quantity and quality of work expected of thoroughly efficient employees. Such cases naturally appeal to the sympathy of those who might be primarily responsible for any action looking toward demotion or separation from the service, and thus a difficulty is presented the only solution of which would seem to be the passage by Congress of some form of retirement legislation. In the absence of such legislation the Department has given the utmost consideration to cases of this character, although it has not retained an employee in a position in which he has been found to be practically useless.

PROMOTION OF EMPLOYEES.

Promotion of employees in the government service constitutes one of the most difficult questions presented in the actual everyday administration of departmental affairs, although practically there is but little restriction by the civil-service rules on this subject. Promotion without examination to a grade for which the entrance tests are higher or essentially different is prohibited, but for the great bulk of promotions, which are usually within a grade, the promoting officer is free to exercise his discretion. That difficulties attend the promulgation of practical regulations to govern promotions is shown by the several ineffectual attempts to enforce rules which have been adopted, and by the significant fact that the Civil Service Commission, which seems to be particularly charged under the civil-service law with the duty of formulating promotion regulations, has not been able after years of study to present anything workable and effective. The ideal system is one in which political, personal, and social influences are entirely eliminated, thereby insuring promotion solely on merit; and the purpose of any system should be to guide in determining who of a number of employees excels in special qualifications or general efficiency. A scholastic examination does not appear to be a means to this desirable end. It is well enough to provide a scholastic test for entrance to the service, but the conditions within the service call for an entirely different test for promotion. Employees work under the direction and observation of chiefs of bureaus and divisions; their capacity, efficiency, and resourcefulness are observed and judged by them; and in the final analysis their rights to advancement should be wholly determined by the opinions of these supervising officials, provided, always, that such opinions are judicious, well informed, and conscientiously reached.

During the spring and summer of 1909, when this Department instituted a thorough inquiry into the efficiency of its personnel, it was demonstrated that as an aid to arriving at a just estimate of the merits of employees for promotion chiefs of bureaus should be required to report from time to time on the efficiency of all under their charge. These reports should bear upon the quantity and quality of work done by employees as well as the interest manifested in it, and, upon the theory that the Government is entitled to a day's work for a day's pay, should show whether the employees are actually earning their salaries. After this information has been procured, recommendations for promotion from bureau chiefs should be considered in connection with the efficiency ratings previously submitted, and if it should appear that employees not having the highest ratings are recommended for advancement the bureau officers should be

called upon for an explanation. Under such a system there is no reason why promotions should not be justly made. It is barely possible that there may be an occasional instance in which an employee may be recommended by a chief of bureau on account of some personal or political influence, but in practically all cases the report and recommendation of the chief are based upon merit and are just as little open to criticism as they would be under a more elaborate system. It is not believed that any sort of mechanical and self-operative method of promotion could be devised, or any set rules established, which could possibly take the place of the discretion, fairness, and knowledge of the chief of a bureau.

INTERDEPARTMENTAL TRANSFERS.

There are many instances in which it is found to be impracticable to make selections for appointment from the civil-service registers. Prior to June 22, 1906, a department could select, after six months' service, an employee in another department or branch of the service having qualifications to fit the needs of a particular position, thus leaving a vacancy which very often could be filled advantageously from the eligible list, but by legislation enacted on that date such a transfer is prohibited if both positions are in Washington, D. C., unless the employee proposed for transfer has served at least three years in the department from which transfer is desired. This applies also to transfers to and from positions outside of the District of Columbia, unless the Civil Service Commission deems the action necessary in the interest of the service and waives the three-year requirement. That transfers, especially to positions requiring executive ability or scientific and technical training, are occasionally desirable and even necessary to the best interest of the Government can not be questioned. The transfer of an employee from a position not requiring the full use of his powers to one requiring a higher order of efficiency also is clearly not only in the interest of the service, but advantageous to the employee himself. It enables a department to fill properly a position which requires a special order of ability or imposes a high degree of responsibility by the appointment of a person whom experience has shown to possess just the qualifications of mind and temperament desired, as well as to retain in the service a valuable employee who might otherwise become dissatisfied with his environments and leave the service, but who, if given the proper encouragement and opportunity might rise step by step into the higher positions. A less direct but by no means unimportant advantage of the privilege of transfer is that it offers inducements to ambitious young men who would enter the service if they felt assured of a fair chance for advancement.

The civil-service act contains no specific authority for transfers. Presumably for this reason the Civil Service Commission considers the filling of a position by transfer such a departure from the general method of appointment prescribed by law as can only be justified when the conditions of good administration will be more fully met than by original appointment. Apparently also the Commission recognized the advantages of a certain amount of elasticity in the transfer rules, for it stated, shortly before the passage of the law establishing the three-year limit, that it believed that transfers had been "restricted to the fullest extent compatible with the best interests of the service."

Experience shows that interdepartmental transfers are perhaps unnecessarily hampered and restricted at the present time by the provision of law referred to. While its object was, unquestionably, to restrict the number of transfers made for personal and other reasons not connected with the best interests of the service, and to prevent persons from accepting appointments to undesirable positions with a view to securing early transfer through improper influence, in actual practice it appears to be merely an arbitrary rule for which no sufficient reason can be found, and an obstacle in the way of businesslike methods. It is not apparent why objectionable transfers could not be restricted by means less detrimental to the general service; why, if a time limit is deemed absolutely necessary, it should be placed at three years rather than at six months or one year; or why the Civil Service Commission should not be authorized to waive the requirement, even in transfers between departments in Washington, when the head of a department concludes and certifies that such action is required in the interests of the service. In pleasing contrast to interdepartmental transfers, and as really convincing illustrations of their usefulness with proper cooperation between the departments and fewer arbitrary restrictions, are the transfers between the various bureaus of this Department. During the past fiscal year there were 90 transfers of this kind. Many of these were made upon the application of the employee concerned; practically all were agreeable to the persons transferred; and all (even those made as the result of the efficiency records taken last year) had in view the ultimate good of the service.

REMOVALS.

During the year there were 115 dismissals in the Department. The causes which led to them may be grouped as follows:

Absence without leave.....	12	Intoxication.....	19
Desertion.....	9	Misappropriation of property.....	3
Destruction of property.....	1	Neglect of duty.....	13
Failure to pay debts.....	1	Tendering resignation without giving	
False statements.....	2	due notice	5
Gross misconduct.....	28		
Inefficiency.....	17	Total.....	115
Insubordination.....	5		

RESIDENCE RESTRICTION IN EXAMINATIONS FOR THE APPORTIONED SERVICE.

The Attorney-General has held that the provision in section 7 of the census act of July 2, 1909, requiring applicants for positions in the government service to be examined in the State or Territory in which they reside, is not limited to the Bureau of the Census, but applies to the entire apportioned service in Washington. The question now arises whether this restriction will not work to the detriment of the service, especially in examinations held for scientific and technical positions. Much difficulty has been experienced in the past in securing suitably qualified eligibles for certain positions of this nature, and the fear has been expressed that this will be increased by the new residence restriction. Thus, for instance, legal residents of the far Western, Southwestern, or Southern States who may happen at the time of examination to be attending scientific and technical courses in the advanced eastern universities would practically be barred from the examination on account of the great expense and inconvenience of returning to their distant home States to take it. This would result in depriving of many appointments those States and Territories which have not received their share under the law of apportionment and would consequently defeat the very ends for which the restriction was imposed. It would, therefore, seem that if the provision in relation to the apportionment is to remain in the civil-service law the proper remedy is to amend the law so as to permit, upon proper showing, legal residents of one State who are attending school in another, or who for other reasons are necessarily absent, to take the examination in the State where they may happen to be and be charged to the State of their legal residence.

SUPERANNUATION.

Probably no question dealing with the personnel of the service has been so seriously considered during the past year as that relating to superannuation. Most civilized countries now provide equitable means for the retirement of their employees, as do many of the state and municipal governments, as well as corporations and large industries, of this country. The problem was encountered and dealt with in the United States Army and Navy fifty years ago. It is now critically present and awaiting solution in the civil departments of the Government. While many unacquainted with actual conditions have frequently approached the subject in a spirit of humanitarianism, most of those in and out of the service now look upon superannuation as an unavoidable contingency which must be met by the application of modern ideas and strictly business principles. Until this is done department officials will continue to bear the burden of an inefficient force rather than place themselves on record as removing, or even reducing, a public servant who has become incapacitated while in the faithful performance of duty. Therefore, while humanitarian reasons may have at first suggested the advisability, and in fact the duty, of providing a system of retirement, it is now being recognized quite generally that the conditions are such as to more than justify it from a strictly economical point of view. The retirement of aged and superannuated employees under some liberal system would likely result in a positive financial saving by creating opportunity for the employment of young men who are able to do two to three times as much work for the salaries paid. It is therefore important that the subject have serious attention, to the end that the Government may be conducted in the most economical manner and at the same time provision be made for faithful servants who have devoted their entire lives to the transaction of the public business.

Reports recently submitted by the bureau officers show that there are 103 employees in the Department 65 years of age or over whom they would be willing to recommend for retirement if some suitable system of providing an annual income were in force. The aggregate salaries of these employees is \$110,645.46, of which \$28,100.77 is said to be unearned.

The following statement is quoted from the report of the Committee of the House of Representatives on Reform in the Civil Service as indicating the extent of superannuation in the government service in the District of Columbia and the consequent amount of loss to the Government annually:

In its report for the year ending June 1, 1906, the Civil Service Commission estimated the annual loss of efficiency in the executive civil service in the District of

Columbia from superannuation at \$400,000. Census Bulletin 94, on the executive civil service, shows 1 government employee in 14 out of 23,254 in the District of Columbia to be over 65 years of age, while the proportion of employees over 70 is large.

It is apparent from the foregoing statement that 1,661 of the 23,254 employees were over 65 years of age. Assuming that the same percentage of superannuation existed in the 1,661 cases just mentioned as is shown by the reports of the bureau officers to exist in like cases in this Department, it would appear that 474 of these employees were superannuated. Dividing \$400,000, reported as being lost to the Government, by the number of superannuated employees (474), it is found that each of them could be paid an annuity of \$843.88 by the Government out of the fund reported as being now a loss.

Unquestionably compulsory retirement on account of age or disability should be authorized by law. It is not so certain, however, that the law should absolutely fix the retirement age, for it is conceivable that in many instances the employee would at the specified period show but little impairment of his physical vigor and might still retain more than a fair degree of mental activity. On the other hand, the fact should not be disregarded that unless the law compelled retirement at a certain age there would be many instances in which the element of human sympathy would control, and thus defeat the purpose of the law. Of the several plans that have been suggested for retirement, the so-called "contributory system" and the "straight pension system" have been given the most consideration. Almost any system which would retire superannuated employees upon an equitable basis would be, from the standpoint of the Government, acceptable as a means of relieving the unfortunate conditions which now exist throughout the service, but the heavy draft on comparatively low salaries under a contributory system would be a hardship and might work an injustice to the employees. If salaries are to remain as they are, it would seem that the Government can well afford as a strictly economical measure to provide a straight pension without contribution from the employees.

As bearing directly upon the question whether the employees should provide the means for their retirement, the following statement is quoted from the report of a bureau officer of the Department:

I strongly advocate a plan for the compulsory retirement of employees when they have reached a certain age (to be determined by proper authority), or when, because of physical or mental disability, they become unfit for service before attaining the age limit. Coincident with retirement for superannuation there should be provided a pension representing an adequate percentage of the salary of employees at the time of retirement. This pension should be given outright by the Government without an assessment levied against the salary of active employees. Owing to the small salaries paid in the civil service * * * the exaction of even a small percentage of the income for a pension fund would work hardship in many cases.

INTERNATIONAL CONGRESSES AND CONVENTIONS.

The State Department, upon invitations issued through foreign diplomatic representatives, frequently gives this Department an opportunity to recommend for appointment suitable persons to represent the United States as delegates to various international congresses and conventions. It is now generally recognized that these congresses are capable of securing results of great value, owing to the interest taken in the work by men of standing and position of the various nationalities and the official recognition vouchsafed by the governments of the countries in which the congresses have been held and by those of other states. During the past year invitations were received to recommend for appointment delegates to the following congresses: Congress on Commercial Instruction, at Vienna, under the patronage of the Austrian ministry of worship; Congress on Dwellings, at Vienna; Congress of Chambers of Commerce and Commercial and Industrial Associations, at London; Conference on Social Insurance, at The Hague; Congress on the Production and Uses of Cold, at Vienna (the American Association on Refrigeration will make a special effort to secure the Third International Congress for the United States), and Third International Congress on Family Education, at Brussels. In all, 19 persons prominently identified with the matters under discussion were nominated by this Department and designated by the State Department to represent the United States at these congresses.

DIVISION OF PUBLICATIONS.

VOLUME AND COST OF PRINTING.

For the fiscal year ended June 30, 1910, there was allotted to the Department (exclusive of the Bureau of the Census, which operates under the appropriation for the Thirteenth Decennial Census) for printing and binding, \$375,000, to which should be added \$1,337.43 for certain printed supplies furnished the Bureau of the Census and reimbursed to the Department, making the total amount available \$376,337.43. Of this amount, \$361,530.43 was expended and \$14,807 was covered into the Treasury. The decrease in expenditures as compared with the fiscal year 1909 was \$13,409.48, or 3.58 per cent.

The statement presented below shows the quantity and cost of each class of work ordered from the Public Printer during the fiscal years 1908, 1909, and 1910.

Class.	1908.		1909.		1910.	
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.
Blank forms.....	10,681,791	\$40,459.72	9,178,840	\$40,686.60	9,639,875	\$43,038.26
Reports, pamphlets, etc.....	2,996,420	257,631.88	4,261,069	288,079.38	3,118,330	263,873.66
Letter heads.....	1,373,800	7,835.26	2,165,280	6,847.30	2,056,500	5,432.36
Envelopes.....	101,122	317.00	78,824	232.95	85,577	220.80
Circulars and decisions.....	261,620	3,818.86	409,450	3,865.83	350,775	4,013.93
Index cards.....	376,300	591.45	600,350	715.05	994,000	1,025.97
Guide cards and folders.....	195,115	1,257.86	247,150	1,388.28	426,400	2,043.32
Memorandum sheets.....	2,593,500	1,917.39	2,389,500	2,313.93	3,802,900	3,135.66
Blank books.....	25,178	23,856.56	22,502	26,462.43	52,977	32,147.14
Miscellaneous books (binding).....	2,855	4,762.26	2,570	4,268.21	3,057	5,804.18
Miscellaneous.....		514.12		79.95		795.16
Total.....		342,962.36		374,939.91		361,530.43

An examination of the above figures shows that there was an increase in the quantity printed of each of these classes, except reports and pamphlets, letter heads, and circulars and decisions. The decrease in the number of reports and pamphlets was due largely to the suspension of the Daily Consular and Trade Reports during the months of March, April, May, and June and the issuing in lieu thereof of a weekly edition of that publication. Of blank forms there was an increase of 461,035, or 5 per cent; of envelopes, an increase of 6,753, or 9 per cent; of memorandum sheets, an increase of 1,413,400, or 59 per cent; of index and guide cards and folders, an increase of 572,900, or 68 per cent; of blank books, an increase of 30,475, or 135

per cent; and of miscellaneous volumes bound, an increase of 487, or 19 per cent.

The following table gives the expenditures for printing and binding for each bureau, office, and service (except the Bureau of the Census) for the fiscal years 1908, 1909, and 1910 and the increase or decrease in 1910 as compared with 1909:

Office, bureau, or service.	1908.	1909.	1910.	Increase (+) or decrease (-) in 1910.	
				Cost.	Per cent.
Office of the Secretary.....	\$16,081.23	\$17,033.22	\$21,026.94	+\$3,988.72	+23.41
Bureau of Corporations.....	16,806.44	9,511.09	8,177.84	- 1,333.25	-14.02
Bureau of Manufactures.....	48,711.51	57,468.97	50,228.55	- 7,240.42	-12.00
Bureau of Statistics.....	83,630.12	84,226.61	90,268.97	+ 6,032.36	+ 7.16
Bureau of Labor.....	32,499.41	42,624.73	33,904.76	- 8,719.97	-20.46
Coast and Geodetic Survey.....	21,927.16	30,291.42	31,188.98	- 8,182.49	-20.75
Bureau of Fisheries.....	8,421.20	9,373.22	14,916.45	+ 5,538.23	+59.05
Bureau of Navigation.....	16,628.94	10,616.20	9,084.08	- 1,582.12	-14.90
Shipping Service.....	3,502.88	2,012.05	2,494.04	+ 481.99	+23.95
Office Supervising Inspector-General, Steam-					
boat-Inspection Service.....	2,988.89	5,619.66	5,870.12	+ 250.46	+ 4.46
Steamboat-Inspection Service.....	6,216.98	12,095.21	9,907.59	- 2,487.62	-20.56
Light-House Board.....	20,422.81	25,174.58	17,930.11	- 7,244.47	-28.78
Light-House Establishment.....	9,694.96	11,279.09	8,019.76	- 3,259.93	-28.90
Bureau of Immigration and Naturalization...	4,380.86	4,843.66	5,999.70	+ 1,156.04	+23.87
Immigration Service.....	22,745.34	13,483.35	19,240.08	+ 5,756.73	+42.70
Division of Naturalization.....	(*)	(*)	755.24		
Naturalization Service.....	6,180.32	9,769.78	11,116.01	+ 2,101.47	+21.50
Division of Information.....	2,218.18	3,610.41	744.78	- 2,865.63	-79.37
Bureau of Standards.....	10,843.13	8,360.64	9,982.98	+ 1,622.34	+19.40
Customs Service.....	9,013.00	8,537.42	11,085.50	+ 2,548.08	+29.84
Total.....	342,962.36	374,939.91	361,530.43	-13,409.48	- 3.58

* Of this amount \$1,337.43 was for supplies furnished to the Bureau of the Census, which reimbursed the Department's allotment to that extent.

† Cost of work for Division of Naturalization carried under the Naturalization Service account.

DISTRIBUTION OF PRINTED SUPPLIES.

There were received and filled during the year 7,342 requisitions from the outside services of the Department, calling for 5,860,337 blank forms, as compared with 4,633,721 in 1909 (an increase of 1,226,616, or 26 per cent), and 269,418 books and pamphlets, as compared with 233,003 in 1909 (an increase of 36,415, or 16 per cent).

The Division filled also 650 requisitions for printed stationery, 331 of which were from the outside services. These called for 14,068,110 envelopes, 2,002,500 letter heads, 3,831,600 memorandum sheets, 10,140 stenographers' notebooks, 7,321 blank books, 1,154,350 index and guide cards, 62,150 vertical folders, 70,321 blank forms, 64,000 embossed letter heads, and 33,075 embossed envelopes. Practically

all of these figures represent increases as compared with the previous fiscal year.

. PUBLICATION WORK.

During 1910 the Department, exclusive of the Bureau of the Census, issued 798 publications, of which 28 were printed in two or more editions. These publications contained a total of 42,125 printed pages, and there was printed of them a grand total of 3,363,323 copies.

The following table summarizes the publication work of each bureau:

Bureau.	Publications.	Pages.	Copies printed.
Office of the Secretary	31	1,150	227,650
Bureau of Corporations	11	1,746	23,040
Bureau of Manufactures	268	10,804	2,075,430
Bureau of Statistics	121	9,428	166,425
Bureau of Labor	23	3,912	136,000
Coast and Geodetic Survey	27	2,907	39,150
Bureau of Fisheries	109	2,382	115,000
Bureau of Navigation	10	2,018	18,200
Steamboat-Inspection Service	10	1,485	254,680
Light-House Board	80	3,008	163,728
Bureau of Immigration and Naturalization	43	1,315	99,100
Bureau of Standards	65	1,970	45,350
Total	798	42,125	3,363,323

DISTRIBUTION OF PUBLICATIONS.

Considerable progress was made during the past year in the matter of centralizing in the Division of Publications the work incident to the care and distribution of the publications of the several bureaus of the Department. This movement, which had its inception during the fiscal year 1909, will proceed as rapidly as good administration will permit. At the present time the Division has under its direction the distribution for all the bureaus and services except the Bureaus of Fisheries, Standards, and the Census, and these, with the possible exception of the Bureau of the Census, will probably be relieved of this work within the next few months.

Experience during the year has very greatly strengthened the opinion that the concentration of this work is both practical and economical, and the delay in conforming to the provision of section 92 of the act of January 12, 1895, which requires that a competent person shall be designated by the head of each department to distribute all publications issued by it, has been due to the crowded conditions in the Department, which to a certain extent have been removed by the acquisition of the Annex at 462-464 Louisiana avenue, in which the Division of Publications is now located.

SALE OF PUBLIC DOCUMENTS.

Previous reports of this Department have indorsed the policy of limiting the free distribution of public documents. The general adoption of such a policy would appear to be wise, and would be a potent factor in reducing to a minimum waste and extravagance in government publication work. At the present time only a few of the publications of this Department are sold—notably, Tide Tables, Coast Pilots, and Coast Charts, issued by the Coast and Geodetic Survey, and Heads of Families, First Census of the United States, 1790, issued by the Bureau of the Census—but there are many upon which it would be practical and expedient to place a price sufficient to cover the actual cost of production, or at least sufficient to act as a deterrent to those who lightly consider their value and who thoughtlessly multiply requests for them without properly weighing personal needs. This is true particularly of scientific and technical publications, such as are issued quite frequently by the Bureaus of Fisheries and Standards and the Coast and Geodetic Survey, and of many of the statistical publications issued by the Bureaus of Statistics, Census, and Manufactures.

Practically all European countries in this way confine the distribution of their public documents to those who have an actual need for them and at the same time not only keep their printing bills down but actually secure reimbursement for a large part of the expense to which they are put in producing the documents. In this country this policy has been pursued to only a very limited extent, but the success that has attended experiments in that line has converted many to the view that it should have a very much broader application. Congress during the past session provided that the International Commercial Directory, soon to be published by the Bureau of Manufactures of this Department, shall be supplied to those only who subscribe for it and pay the sum for which it is provided it shall be sold. This is a step toward a condition which it is hoped may be reached without much further delay, and which this Department will be pleased to see brought about.

CONGRESSIONAL INQUIRY INTO DEPARTMENTAL PRINTING.

During the year the work of the Division of Publications was subjected to very close scrutiny on the part of the Congressional Printing Investigation Commission, which has for some time, by direction of Congress, been making a thorough inquiry into the operation of the laws relating to the public printing and binding and the distribution of public documents with a view to recommending a revision, consolidation, and codification of such laws. On June 25, 1910, the

Commission submitted to Congress a preliminary report (S. Doc. 652, Sixty-first Congress, second session) of the result of its inquiries, together with certain recommendations designed to remedy some of the conditions which have brought forth criticism of existing laws. Under the heading "Departmental printing and binding and distribution of public documents," the various systems in operation in the several departments for handling their printing allotments are reviewed. The organization of the Division of Publications, its cost-keeping system, and the regulations adopted by this Department to govern its printing and binding are discussed, and commended.

The Commission also makes several recommendations, which, if enacted into law, would but slightly affect this Department. The Commission recommends that there be created by law in each department a division of publications; that the supervision of the printing and binding and distribution of public documents in each department be centralized; that all printing for the Government be done at the Government Printing Office; and that the Public Printer be prohibited from using any paper for printing and binding except that purchased by him, due consideration being given, in the purchase of paper, to recommendations of departments. These conditions already virtually obtain so far as the Department of Commerce and Labor is concerned, and favorable action by Congress on the recommendations will cause the Department no very serious inconvenience.

BUREAU OF THE CENSUS.

While the Bureau of the Census during the past fiscal year has carried on the usual annual investigations regarding statistics of cities, of production and consumption of cotton, of births and deaths, and of forest products, the greater part of the work of the Bureau has been connected with the Thirteenth Decennial Census, which, under the law, included an enumeration of population, agriculture, and manufactures, mines, and quarries. The work of collecting these statistics was substantially finished during the fiscal year.

FIELD WORK OF CENSUS OF POPULATION AND AGRICULTURE.

The census of population and agriculture was taken as of date April 15 by a force consisting of 330 supervisors and about 71,500 enumerators, in addition to special agents and clerks employed to assist the supervisors and a few special agents who had charge of the census of Hawaii and Alaska. The enumerators in cities of 5,000 inhabitants and over were allowed fifteen days in which to take the enumeration, and those in the country districts thirty days. It was found necessary, as is the case in all censuses, to allow a considerable amount of additional time for checking up and perfecting the returns, but the schedules began to reach the Bureau early in May, and much the larger part of them had been received by the end of the fiscal year, and all have since been received.

The supervisors were appointed by the President with the approval of the Senate, and the enumerators by the supervisors with the approval of the Director of the Census. For the purpose of facilitating the selection of competent enumerators examinations of a practical character were held throughout the United States. Much the larger proportion of the enumerators who were actually employed had successfully passed this examination, although in some cases where no candidate appeared for a given district it was necessary to select enumerators without examination. The test for enumerators was similar to the one used in 1900, but the method of conducting the examination was entirely different. The candidates for the present census were assembled in convenient places, and the conduct of the examination supervised by the supervisor of the census or his assistants, or by the civil-service examining boards, or in some cases by postmasters. At the census of 1900 the examination papers were filled out by the competitors at their homes.

Special efforts were made to secure a complete and accurate census. An extensive campaign of publicity was conducted for the purpose of acquainting the people with the fact that the census was to be taken, removing prejudice against furnishing information, and familiarizing the people with the questions to be asked. A proclamation by the President, printed in 23 languages, was circulated through the press and widely posted. The newspapers of the country very generally published numerous articles concerning the census, and circulars of information were distributed through the public schools and otherwise.

As another means of preparing the public for the census and of securing more accurate returns, advance schedules of population were distributed in large cities and advance schedules of agriculture in rural districts. There is no provision of law in this country, as there is in foreign countries, requiring the heads of families themselves to fill out the schedules. They were, however, requested to do so before the arrival of the enumerator. These advance schedules were not the official schedules, but every enumerator was required to make a complete enumeration on separate schedules carried in his own portfolio. As was to be expected, a large proportion of families failed to fill out the schedules, but the general opinion of the enumerators and supervisors is that the advance schedule of population served a very useful purpose in preparing the people for the enumeration and familiarizing them with the questions. Even where the schedules were not filled out, they saved time for the enumerators and increased the accuracy of the returns. Many of the more intelligent people carefully and fully prepared these schedules in advance. Where this was done, the work of the enumerators was greatly facilitated. Moreover, the advance schedule, when filled out, was likely in many cases to contain more accurate information than the enumerator could otherwise have obtained.

It is impossible as yet to determine with certainty whether the advance schedule of agriculture was an advantage or otherwise. While in many cases it served a useful purpose, it appears that in some cases the schedules, which had been filled out in a careless manner by the farmers, were, despite instructions to the contrary, copied by the enumerators on their official schedules without careful checking up. It is possible that in such cases the results were less accurate than would have been secured had the questions been asked orally by the enumerator in the first instance. It is the intention of the Director of the Census to make a careful investigation in due time as to the advantages or disadvantages of the use of the advance schedules.

The supervisors in large cities, where the work of the enumeration is much more difficult than in the country districts, were furnished with a considerable number of special agents to assist in instructing the enumerators, in watching the conduct of their work, and in checking over the results to make sure of their completeness.

While in general the work of enumeration was performed with great care, and while it is believed that the present census is more accurate than any before taken, it has developed that the population was overcounted in a considerable number of cities and towns, partly through deliberate fraud and partly through unduly broad interpretation of the instructions with reference to the enumeration of floating population. The investigation of cases of "padding" the census had only begun at the close of the fiscal year and has not yet been completed, so that a definite statement on this subject can not be made at the present time.

The cost of the field work of the enumeration of population and agriculture, exclusive of printing schedules and instructions, will reach approximately \$5,735,000, consisting of about \$4,650,000 for enumerators, approximately \$585,000 for supervisors, and about \$500,000 for clerks and special agents to assist supervisors and for the travel and other miscellaneous expenses of the supervisors.

The greater part of the enumerators were paid on a piece-price basis at rates ranging from 2 to 4 cents per name for the population census, and from 20 to 30 cents per farm for the agricultural census. In the Western States, where the population is sparse, and in a few districts elsewhere for the same or other peculiar reasons, enumerators were paid at per diem rates ranging from \$3 to \$6. In nearly all cases enumerators were required to bear their expenses out of their compensation, but in a few districts of peculiar difficulty, mainly in the State of Nevada, a small additional allowance was made for traveling expenses. A limited number of enumerators were also paid at mixed rates; that is, a fixed sum per day plus a specified sum for names and farms.

Of the 69,023 enumeration districts in continental United States (a number somewhat smaller than the number of enumerators, because in some cases two enumerators were employed in one district) 60,412 were paid at piece-price rates, 7,637 at per diem rates, and 974 at mixed rates. Although the compilation has not yet been worked out, it is estimated that the enumerators on piece-price and mixed rates earned on an average between \$3.50 and \$4 per day actually employed.

Considerable difficulty was encountered in securing enumerators who were willing to work at these rates. The rates were little higher than in 1900, whereas there has been in many sections of the country considerable increase in the cost of living and in prevailing rates of

wages. In view of the estimates laid before Congress by his predecessor, however, and in view of the appropriations, the Director did not feel warranted in materially increasing the rates above those paid ten years ago.

By an amendment to the census act, passed March 24, 1910, the population schedules were made to include an inquiry with regard to the mother tongue of persons born abroad and of foreign-born parents of persons born in this country. This amendment was passed so late that the schedules had already been printed, and some difficulty was encountered in providing for the securing of this information. A considerable number of enumerators failed entirely to ask the question, but it was found possible in the Bureau to edit such schedules, in a large proportion of cases, with almost entire accuracy, by determining the mother tongue from the country of birth. While this, of course, is impossible for certain countries where there is a great variety of races, it can be done with substantial accuracy for other countries, such, for example, as Italy, Norway, and England.

By amendment to the census act, passed February 25, 1910, the Director was required to take a special census of irrigation enterprises. The regular schedules of agriculture used by the enumerators called for the quantity of irrigated land and the crops raised thereon, but additional schedules were prepared for the collection of information directly from the operators of irrigation enterprises. The work of collecting information on these schedules is now in progress and will not be completed until about the close of the calendar year.

FIELD WORK OF MANUFACTURES CENSUS.

Except in a limited number of sparsely settled districts where the enumerators were directed to collect statistics of manufactures, mines, and quarries in addition to the statistics of population and agriculture, the census of manufactures, mines, and quarries was collected through a force of special agents, appointed by the Director of the Census, and entirely independent of the supervisors of the census. These special agents were of two grades, the higher grade having supervisory duties or being employed to canvass the large establishments and the central offices of industrial combinations, while the lower grade performed the greater part of the field work. The number of special agents of the first grade was 79, and of special agents of the second grade 1,132. In addition to special agents of the first grade 106 regular employees of the Bureau were sent into the field mainly for supervisory work.

The census of manufactures, mines, and quarries related to the calendar year 1909. The work of collecting the statistics in the field was begun about February 1 and was nearly completed by the end

of the fiscal year, and since that time has been entirely completed. The returns covered about 345,000 establishments, and the cost of the field work amounted to about \$750,000.

The only innovation in the method of collecting the statistics of manufactures for 1910 as compared with 1905 consisted in mailing schedules to the manufacturers shortly in advance of the arrival of the special agent, with the request that they be filled out before his arrival. As was expected, comparatively few manufacturers actually filled out the schedule in advance, but the agents uniformly reported that the schedules served a very useful purpose as an introduction and in familiarizing the manufacturers with the scope and significance of the inquiries.

The schedules of manufactures for the present census were considerably simplified as compared with those previously used. This was especially true of the supplemental schedules used for obtaining detailed information concerning individual enterprises. This simplification of the schedules tended materially to increase the degree of accuracy secured.

By an amendment to the census act, passed February 25, 1910, the Director was required to secure an enumeration of the animals slaughtered for food and the number of hides taken from them. This involved a census of all small butchering establishments, which under the general definition of manufacturing establishments would not otherwise have been included. The work was done by the special agents of manufactures in most areas and by the enumerators elsewhere.

GENERAL ORGANIZATION OF OFFICE FORCE.

The office work in connection with the decennial census has required a very large addition to the force of the Bureau. At the beginning of the fiscal year 1910 the Bureau had on its rolls, as regular employees in Washington, about 650 persons. By June 30, 1910, the force had increased to about 3,000, and by October 31 to about 3,650, consisting in round numbers of 25 administrative officers, 90 special agents, 610 clerks on the permanent roll, 2,750 clerks regularly appointed on the temporary roll through civil-service channels, 115 emergency appointments on the temporary roll, and 65 employees in the machine shop. The latter were, in part, appointed without civil-service examination on account of the necessity of very prompt selections.

The greater number of clerks on the temporary roll were selected in accordance with the general plan provided in the Thirteenth Census act, namely, as the result of a competitive civil-service examination, appointments being apportioned among the States and the selections being made in all cases from the top of the register.

By authority of the provisions of the census act, however, a limited number of persons were employed on emergency appointments to meet the emergency in the rush work of punching population cards. These emergency appointments consisted partly of persons who had had previous census experience and partly of persons selected from the eligible register without regard to apportionment, because of their immediate availability. It is expected to drop this emergency force as soon as the punching work is completed in December.

OFFICE WORK OF THE POPULATION CENSUS.

The office work of the population census consists, in brief, of the following steps: (1) A count of the population direct from the schedules for the purpose of determining the pay of the enumerators and—after subsequent careful examination of the schedules to determine their accuracy—for the purpose of announcing the population of the various localities and States, and ultimately the United States as a whole; (2) such editing of the schedules as is necessary to prepare them for the punching clerks, particularly with reference to mother tongue and occupation; (3) punching of a card for each individual making up the population, showing all the facts appearing on the schedule concerning him, this being done by means of punching machines; (4) the comparing of the punched cards with the original schedules so far as is found necessary; (5) the verification of the cards by means of electrical machines which automatically reject cards in which any of the required holes have not been punched or in which the holes are inconsistent with each other, and the correction of such rejected cards; (6) the sorting of the cards by means of electrical sorting machines into main groups, as determined, for example, by sex, color, or native or foreign birth, several different sortings being required at the different stages of the work; (7) tabulation of the facts with regard to the characteristics of the population from the cards by means of electrical tabulating machines, it being necessary to run the cards through the machines several times in order to take off all of the facts; (8) assembling and publication of the results of the tabulation.

The 300 new electric keyboard punching machines referred to in my previous report, together with the 100 "semiautomatic" electric tabulating machines, were all received from the manufacturers prior to the end of the fiscal year, and most of the punching machines were in operation by that date. Considerable difficulty was experienced at first with the punching machines on account of minor defects in design or in materials or workmanship. Such defects were, perhaps, to be anticipated in a machine based on entirely new principles. The defects have at the present time, however, been

largely remedied by the machine shop of the Bureau, and the punching machines are now working very satisfactorily.

The average number of cards punched per day by each operator on the electric machines is about 1,800 at the present time, as compared with an average of 1,150 punched on the machines of the pantagraph type used in 1900. Because of the difficulties first encountered with the electric machines, about 140 of the old machines are also being used, for day work only. The electric machines are used in two shifts.

Operators punching cards are paid at the rate of 20 cents per 100 for those using the automatic machines and 30 cents per 100 for those using the hand machines. This system of payment is working with entire satisfaction.

The use of the semiautomatic tabulating machines was begun only to a small extent toward the close of the fiscal year, but a large proportion of them are in operation now and are proving most satisfactory. The operators are able, on the average, to tabulate about 16,000 cards per day, as compared with about 7,500 on machines used at the census of 1900. Operators are paid at the rate of 20 cents per 1,000 cards.

Since the close of the fiscal year the Bureau has completed a new automatic tabulating machine of remarkable efficiency. The cards are fed in by machinery instead of by hand, with a consequent increase of about eightfold in speed as compared with the semiautomatic machines. Several other machines of this type are now being constructed and it is expected that a large part of the tabulation will be done by them, with a very great saving in cost.

The sorting machines which are used by the Bureau were bought in 1900 from the Tabulating Machine Company, but have been widened to accommodate the wider card employed, and have been improved in certain other details, thereby greatly increasing their speed. The Tabulating Machine Company brought suit against the Director of the Census, claiming that the alteration of these machines was practically equivalent to the construction of new machines in infringement of the patents of that company. On trial, however, the preliminary restraining order was dissolved and the motion for a preliminary injunction denied. The motion for a permanent injunction has not yet been tried, but the Director of the Census is confident that there has been no infringement of patents.

Great care has been given by the Bureau of the Census to a consideration of methods of presenting the results of the population census, and it is believed that they will be rendered much more valuable to the public than hitherto. An important innovation will be the presentation of the statistics for each county, city, or State in a place by itself. In the volumes of the census of 1900 the facts in

regard to any particular locality were scattered in a large number of different places through several volumes. In addition to this presentation by locality there will be a presentation according to subjects in which the comparative statistics for all cities of 25,000 inhabitants and over and for States will be published. In other words, there will be a duplication of the principal figures in such a way as to facilitate the convenience, on the one hand, of the persons interested in a particular county, city, or State, and, on the other hand, of those interested in any particular subject.

Another innovation will be the presentation of percentages showing the relationship of the figures in practically all cases where such percentages are of any significance. This will greatly facilitate the interpretation and comparison of the statistics.

It is also proposed at the present census to work out from the returns on the schedules statistics with regard to the fecundity of the population, as indicated by the number of children born, and the number of children living, for women of different classes, in comparison with their age and the duration of marriage. A separate set of cards, in addition to those for the population returns proper, is required for this tabulation. A considerable amount of work on this subject was undertaken at the census of 1900, and a large number of cards were prepared, but they were never tabulated and no results were published. I desire to recommend to Congress that the Director of the Census be authorized to tabulate the more important information on this subject for the 1900 census, as well as that for 1910. In due time an estimate of the necessary expenditure will be laid before Congress. This subject is one of profound importance, and the census schedules furnish data by which conclusions of the utmost value can be readily drawn. A plan has been devised by which the expense of punching cards and tabulating the results on this subject for the census of 1910 will be much less than would have been necessary to complete the work on the lines begun in 1900.

OFFICE WORK OF THE AGRICULTURAL CENSUS.

The present census of agriculture is being tabulated by radically different methods from those used in 1900. At that time a system of punched cards and electric tabulating machines was employed. This system, however, was found very expensive and is quite unnecessary in view of the fact that, unlike the population returns, the returns of agriculture need to be presented under only a few broad classifications. In order to secure the arrangement of the facts according to these classifications at the present census, the schedules themselves are sorted, first, according to the color of the farmer; second, according to his tenure, and, third, according to the size of the farm. The data from the schedules for each of these subclasses

are then taken off directly on listing adding machines. For certain purposes unusually wide adding machines, having 17 banks of figures, are used, thus enabling three columns to be added side by side, as, for example, the acreage, quantity, and value of a given crop. This arrangement permits the necessary editing of the returns to be made much more economically than by the method of editing the original schedules before tabulation, which was followed in 1900. The eye can readily pass down the column of figures, and if it is found that any item has been omitted (as, for example, the value of a crop where the quantity is given) an estimate of substantial accuracy can readily be made from the averages for the other farms in the group. Similarly, obviously erroneous figures, such as, for example, where a cipher is by mistake added or omitted, can be readily detected. It should be noted, however, that the practice of editing returns is confined to exceedingly narrow limits, and can not possibly result in any vitiation of the totals.

The total number of adding and listing machines used in the agricultural division is 263. In addition 23 typewriting adding machines are employed for summarizing results and for certain special tabulations which require a large number of columns side by side. These machines are proving highly satisfactory.

The work of tabulating the agricultural census had only just been begun at the close of the fiscal year, but at the present time the figures with regard to acreage and value of farms and buildings, number and value of live stock, and acreage, yield, and value of principal crops, have been tabulated for from one-third to one-half of the farms of the country. It is expected to complete these principal branches of the tabulation early in the spring of 1911, after which the less important data will be tabulated. The figures for these more important data for a number of States will be published before the end of the calendar year.

It is expected that very extensive changes will be made in the methods of arranging and publishing the figures of the agricultural census, by which the results will be more readily grasped and prove more useful to the general public. The changes in this respect in the agricultural census will be broadly similar to those mentioned with respect to the population census.

There has been no material change in the method of tabulating the results of the manufactures census. This is done chiefly by ordinary adding machines and wide-carriage typewriters. No radical changes will be made in the method of publishing the returns, but some changes of considerable importance have been determined which, it is believed, will render the figures more convenient and instructive.

APPROPRIATIONS.

As stated in my annual report for 1909, the estimate originally made of the cost of taking the Thirteenth Census and at the same time continuing the regular work of the Bureau of the Census for the three-year "census period" ending June 30, 1912, was \$14,117,000, of which \$12,930,000 was estimated as the cost of the Thirteenth Census proper. Although it was believed at the time I submitted my last annual report that this estimated expense would not be exceeded, it now appears probable that the estimated sum will not be sufficient, and that the expenditure for the Thirteenth Census period is likely to reach fully \$14,500,000. On June 29, 1909, an appropriation of \$10,000,000 was made by Congress for the salaries and necessary expenses of the Thirteenth Census. This appropriation was not limited to the fiscal year 1910, but the greater part of it was required during that year in paying supervisors of census, enumerators, special agents, and others employed in field work. On June 17, 1910, the legislative, executive, and judicial appropriation bill carried an additional appropriation of \$2,000,000, which is to continue available until the end of the present census period. It is probable that the greater part of the sum now appropriated (\$12,000,000) will be expended before the end of the present fiscal year. Another appropriation of at least \$2,500,000 will therefore be necessary to cover the cost of tabulation and publication for the remainder of the census period. Of the \$2,500,000 asked for, \$1,000,000 should be available immediately on the passage of the act making the appropriation.

QUARTERS.

In order to provide for the large force necessary to compile the data for the Thirteenth Census, it was necessary to secure additional quarters. Therefore two additional buildings were leased about the first of the present calendar year; these together contain about as much floor space as the main census building. The aggregate rental of the three buildings now occupied is \$40,000 per annum. In view of this large expense, and still more by reason of the inconvenience of the buildings themselves and of the separation of the force, serious consideration should be given at the proper time to the question of constructing a special building for the temporary work of the next decennial census and those succeeding. While provision has been made in the plans of the proposed building for the Department of Commerce and Labor to accommodate the normal force of the Bureau of the Census during intercensal periods, it is inexpedient for obvious reasons to make provision in the proposed Department building for the larger force employed by this Bureau during the decennial census period only.

WORK OF THE BUREAU ASIDE FROM THE DECENNIAL CENSUS.

During the year the Bureau of the Census issued 28 publications, 8 being reports of some magnitude and 20 being bulletins and pamphlets. The Bureau now publishes annual statistics on four subjects, namely, (1) official statistics of cities having over 30,000 inhabitants; (2) statistics of ginning, consumption, and stocks of cotton; (3) vital statistics for those States and cities which maintain a system of registration of births and deaths; and (4) statistics of forest products, collected and published in cooperation with the Forest Service of the Department of Agriculture.

The Bureau also publishes from time to time special reports on subjects not covered by the annual statistics or the regular decennial census. During the year the Bureau completed and published a report on religious bodies relating to the year 1906. The biennial edition of the Official Register, the second published by the Bureau since the transfer of that publication from the Interior Department, was for the first time issued within the time prescribed by law—December 1. The Bureau also published the results of its investigations of electrical industries covering the year 1907, continuing a series of quinquennial reports on the subject, initiated in 1902.

The Division of Vital Statistics of the Bureau during the year published the decennial revision of the International Classification of Causes of Sickness and Death, which was translated and printed for the use of registration officials and others. The division has also completed the first collection of statistics of births ever made by the Federal Government. This special report, soon to be issued, covers certain States and cities which possess registration records affording satisfactory data in necessary detail. It is hoped that the areas in which such records of births are kept with proper accuracy may gradually be extended, as has been the case with the registration of deaths.

A report (now in press) on the census of fisheries for the calendar year 1908 has also been completed. Preliminary reports were given to the press for each of the separate fisheries of the country—the Pacific Coast, Great Lakes, Mississippi River and tributaries, Gulf of Mexico, and Atlantic Ocean.

In compliance with the requirements of Senate resolution No. 270, Sixty-first Congress, second session, there is now being prepared for the use of Congress a report on the cost of retiring superannuated government employees. The Bureau also completed the work of tabulating the reports from the national, savings and private banks and trust companies for the National Monetary Commission. Results of this investigation have been published in the reports of that Commission.

BUREAU OF IMMIGRATION AND NATURALIZATION.

IMMIGRATION IN GENERAL.

The report of the Commissioner-General of Immigration confirms the prediction of the report for the fiscal year 1909 that the trend of immigration was upward and was rapidly reassuming the large proportions which prevailed prior to the fiscal year 1908. During the past year the number of aliens coming as immigrants was 1,041,570. As the later months of the year show a greater proportionate increase than the earlier, it seems likely that the ensuing year will witness a still nearer approach to the largest record so far made—that for the year 1907, viz, 1,285,349.

Of the total of 1,198,037 aliens entering the country, 1,041,570 were, as above stated, of the immigrant class (i. e., had left a permanent residence outside the United States and were entering with the intent to reside permanently in this country), while 156,467 were of the nonimmigrant class (i. e., were either former residents of the United States returning after a temporary absence, or permanent residents of foreign countries entering for temporary purposes). In connection with this must be considered the fact that 380,418 aliens left the country, of whom 202,436 were of the emigrant class (i. e., were leaving a permanent residence in the United States with intent to reside permanently abroad), and 177,982 were of the nonemigrant class (i. e., were departing with intent to remain abroad temporarily, or returning to their native land after a temporary stay here). With these statements may be compared the figures for the fiscal year 1909, showing that 944,235 aliens entered the country, of whom 751,786 were of the immigrant and 192,449 of the nonimmigrant class, and that 400,392 left the United States, of whom 225,802 were of the emigrant and 174,590 of the nonemigrant class. It will be seen that the actual increase in the alien population for the fiscal year 1910 was 817,619, as against an actual increase in the fiscal year 1909 of 543,843, the increase for the past year exceeding that for the preceding year by 273,776.

AGES, LITERACY, AND FINANCIAL CONDITION OF IMMIGRANTS.

Of particular interest with regard to the 1,041,570 immigrants entering the country are the following statistics: Of these, 120,509 were under 14 years of age, 868,310 were between the ages of 14 and 44, and 52,751 were 45 or over. As to literacy, 253,569 could neither read nor write and 4,571 could read but not write, these figures including no aliens under 14 years of age, which indicates a

decrease in illiteracy from 29 per cent of the total in 1909 to 28 per cent of the total in 1910. In 1908 the ratio was 26 per cent; in 1907, 30 per cent, and in 1906, 28 per cent. The total amount of money brought to the country by arriving aliens, calculated on the not altogether reliable basis of amounts shown at time of arrival, was \$28,197,745, or an average of about \$27 per person. There is no way, of course, to determine how much of this consisted of money sent the applicants by relatives or friends living in the United States. Concerning payment of passage, 755,453 claimed to have bought their own tickets, while 274,204 admitted that they had been assisted in this regard by relatives, and 11,913 that they had been so assisted by friends. According to the statement of the aliens themselves, it therefore appears that over 25 per cent of the total number admitted were assisted to reach this country.

AGES AND PERIODS OF RESIDENCE OF DEPARTING ALIENS.

During the year 202,436 aliens left the United States. Concerning 34,043 of these it has not been possible to secure a record of the period during which they have lived here, as they departed across the Canadian border. It appears that 13,741 were less than 14, 167,440 ranged from 14 to 44, and 21,255 were 45 years of age or over; while 136,159 had resided in the United States less than 5 years, 23,969 from 5 to 10 years, 3,877 from 10 to 15 years, 2,310 from 15 to 20 years, and 2,078 over 20 years.

OCCUPATIONS OF IMMIGRANTS AND EMIGRANTS.

Of common unskilled laborers, 214,300 immigrated and 89,393 emigrated; as compared with 138,570 members of the skilled trades immigrating and 21,574 emigrating. These should be compared further with the figures for the fiscal year 1909, as follows: Unskilled laborers, 174,800 immigrating and 118,936 emigrating; and skilled laborers, 87,160 immigrating and 21,919 emigrating.

SOURCES OF IMMIGRATION.

It is still true that the bulk of our immigration is being drawn from the countries of southern and eastern Europe. Italy, Austria-Hungary, Greece, Turkey in Europe and the smaller principalities adjacent, and Russia supplied about 68 per cent of the immigrants admitted in 1910. In 1909 these same countries furnished 67 per cent. This is in marked contrast to the immigration of former times.

REJECTIONS OF ARRIVING ALIENS.

During the year it was necessary to turn back at the ports 24,270, aliens, or about 2 per cent of the total number applying for admission. The corresponding total and percentage for the year 1909

were 10,411, or 1.1 per cent. This important matter is presented very clearly by a comparative statement showing the principal causes of rejection for the years 1905 to 1910, inclusive, given in the report of the Commissioner-General of Immigration and here reproduced. It will be noted that the figures for 1910 show an increase in the number rejected on moral grounds from 777 in 1909 to 1,075 in 1910.

Cause of rejection.	1905.	1906.	1907.	1908.	1909.	1910.
Idiots.....	38	92	29	20	18	16
Imbeciles.....				45	42	40
Feeble-minded persons.....				121	121	125
Insanity (including epileptics).....	92	139	189	184	167	198
Likely to become a public charge (including paupers and beggars).....	7,898	7,069	6,866	3,741	4,458	15,927
Afflicted with contagious disease.....	2,198	2,273	3,822	2,847	2,306	3,083
Afflicted with tuberculosis.....				59	82	95
Criminals.....	44	205	341	136	273	580
Prostitutes and other immoral women.....	24	30	18	124	323	316
Procurers of prostitutes.....	4	2	1	43	181	179
Contract laborers.....	1,164	2,314	1,434	1,932	1,172	1,786

ALIEN CONTRACT LABORERS.

With respect to this feature of the immigration law, the Commissioner-General's report does not show any change from the satisfactory conditions of 1909. The Bureau and the Department have continued to enforce said provisions in a strict but at the same time fair manner. During the year 1,786 aliens were rejected at the ports on the ground that they were seeking to enter in violation of the alien contract labor provisions, and 78 were arrested and deported upon the same ground. This is about the same proportion of rejections and deportations as was shown for the previous year. Prior to 1909 there were in the service only two inspectors (stationed at New York and Boston) who were assigned exclusively to this class of duties, the enforcement of the alien contract labor provisions of the law having been vested in the immigration officers who attend to its general administration. During 1910 five more inspectors were assigned to this work exclusively, and were stationed at important labor centers. Thus, it is believed the general efforts of the immigration officers will be well sustained.

The Commissioner-General emphasizes the necessity for amending these provisions in such a way as to bring to justice parties responsible for the importation of contract laborers in a larger number of cases than is possible under the existing statute and so as to permit of a predetermination in those cases in which employers claim the privilege, under the exception to the statute, to import skilled help because of inability to obtain a sufficient supply in the United States.

ARRESTS AND DEPORTATIONS.

During the year 2,695 warrants of deportation were executed after granting hearings to the arrested aliens, compared with 2,124 for the previous year. These fall under the following heads: Those who were members of the excluded classes at the time of entry, 1,137; those who became public charges from causes existing prior to entry, 933; those who became prostitutes after entry, 53; those entering without inspection, 549.

The details with respect to the number of aliens actually returned to the countries whence they came on the various statutory grounds shown in the Commissioner-General's report need not be given here, but attention should be directed to the fact that the total number of aliens returned to the country of origin as physically, mentally, or morally below the standard set by the law was 6,612, this total being divided into 3,755 for physical, 1,088 for mental, and 1,769 for moral disqualifications. The corresponding figures for the year 1909 were 3,040 for physical, 1,078 for mental, and 1,138 for moral—a total of 5,256.

WHITE-SLAVE TRAFFIC.

The immigration law, as it affects the traffic commonly given the above designation, has been materially strengthened by two laws passed at the last session of Congress. One overcomes, so far as is constitutionally possible, the weakness in the general law which was pointed out by the Supreme Court in the Keller case, and also removes the three-year limit from the statute so far as aliens of this class are concerned. The other deals more particularly with interstate traffic in women for immoral purposes, and confers upon the Commissioner-General of Immigration additional powers with respect to the enforcement of the International White-Slave Agreement. The Commissioner-General's report shows that the efforts which were inaugurated in 1908 and continued in 1909, looking to an especially rigid enforcement of the law in this respect, have been continued and supplemented during the past year to the fullest extent possible with the limited appropriation available. It must again be pointed out that the federal officers are powerless under existing law to deal with more than a fraction of these cases. If the evil is to be met, the various States and municipalities must take a more active interest and adopt more rigid measures than heretofore.

JAPANESE AND KOREAN LABORERS.

The statistics furnished by the Commissioner-General regarding the enforcement of the President's proclamation of March 14, 1907, issued in pursuance of section 1 of the act of February 20, 1907, show satisfactory results. During the year 2,687 Japanese applied for

admission to continental United States, 2,598 of whom were admitted and 89 debarred. Of those applying, 2,442 were and 245 were not in possession of proper passports. Of those holding such passports, 2,393 were found on examination to belong to classes entitled under the proclamation and understanding with Japan to receive such credentials and only 49 were found not to be entitled thereto. The said 2,393 entitled to passports consisted of 722 former residents, 1,158 parents, wives, or children of residents, 512 new arrivals who were nonlaborers, and 1 settled agriculturist. The 49 not entitled to passports were laborers who were neither former residents nor the parents, wives, or children of such residents. During the same period 1,561 Japanese applied for admission to Hawaii, 1,527 of whom were admitted and 34 debarred. Of those applying, 1,545 had and 16 had not proper passports. Of those holding such passports, 1,454 were found to be entitled and 91 not entitled to them. Of the 1,454, 257 were former residents and 1,197 the parents, wives, or children of such residents.

CHINESE IMMIGRATION.

The Commissioner-General again devotes considerable space to a discussion of the difficulties which attend the enforcement of the Chinese-exclusion laws, which difficulties, despite the most untiring efforts upon the part of the administrative officers, seem to be on the increase. He again emphasizes the necessity for so amending these laws as to bring them into general agreement with the more systematic provisions governing aliens of other races, and to give the executive branch control of administration so distinctly executive in character as the arrest and deportation of unlawfully entered persons. At the same time his report shows that there has been great activity in the apprehension of smuggled Chinese and of those engaged in the smuggling; also that more general success has attended the efforts to deport arrested Chinese than was the case in some previous years.

During the year the Department approved a revision of the Chinese regulations presented to it by the Commissioner-General. In revising the rules two purposes were especially had in view: First, to reduce them to simpler terms, so that they might be more readily understood and followed, and, second, to secure in every possible way the enjoyment of the privileges which are allowed by the statutes to Chinese of the exempt classes and to Chinese laborers lawfully residing in this country, making the entry and reentry as easy and certain as the necessarily drastic provisions of the law permit.

DIVISION OF INFORMATION.

The distributive work of this Division during the greater part of the year was confined to farm laborers and domestics. The number distributed was 4,283, showing an increase over the preceding fiscal year of 115.

To the alien, prior to the moment of landing, the Division can give no information. After he lands, however, the Division may inform him of actual conditions in any part of the country generally or specifically. The likelihood of his displacing a citizen or any other is lessened when he is impartially informed of the real industrial situation. The records of the office show that information was given to 18,239 applicants at the branch offices of the Division. It is safe to assume the information so imparted benefited over double that number, owing to the fact that callers represent groups of from two to ten who could not call in person to make inquiry, but who profited by the information given. As in preceding years, the precaution was taken not to list the same person twice, no matter how often he called.

Over one-half of those applying directly for information were made up from six nationalities from northern Europe, viz, German, 3,557; Polish, 2,657; Swedish, 1,424; Danish, 1,239; Russian, 1,233; and Norwegian, 1,014, making a total of 11,124. It appears that a greater interest in farming and farm work prevailed during the last fiscal year than during the preceding years, for the inquiries were nearly all concerning agricultural labor.

Nine hundred and fifty-two native born and 362 naturalized citizens of the United States applied for and received information during the last fiscal year. The Division has given information freely to citizen applicants who wish to learn where they can locate or find industrial conditions adapted to their wants.

Those who seek to inform themselves on industrial conditions are not attracted to it by any system of advertising adopted for that purpose. After being landed the alien is handed a leaflet printed in the following languages: English, German, Dutch and Flemish, Norwegian and Danish, Swedish, Italian, Spanish, French, Greek, Turkish, Syrian, Bulgarian, Roumanian, Slovak, Slovenian, Croatian, Bohemian, Polish, Ruthenian, Russian, Finnish, Magyar, Lithuanian, and Yiddish. This leaflet directs attention to the fact that information may be obtained through the Division of Information, giving the address of the branch office. The Division reports that the prevailing scale of wages for farm hands has increased about \$5 a month during the year and that wages for unskilled laborers have advanced in about the same proportion.

Attention is called to the fact that arriving immigrants may travel at a lower rate from the Ellis Island immigrant station than

residents of the United States pay in case they desire to proceed from New York to other parts of the country.

It is recommended that in each new immigrant station to be built and those in course of construction rooms be set apart for the Division of Information and that data collected by it be made accessible to arriving aliens. It is the intention during the coming year to collect and compile information by States so that a person wishing information concerning a certain locality in a certain State may not have to examine a mass of publications which may not interest him. With a large map facing the applicant for information in a room specially set apart for that purpose and data carefully compiled concerning the resources and physical characteristics of each State, there should be no reason why any person should want for work. A chief cause for idleness on the part of those who are willing to work is a lack of information. Through cooperation with other branches of the Government service, chiefly those of the States, information on all questions of interest to those seeking employment may be supplied through the Division of Information.

As in previous years, the greater number of those who were directed to employment went to New York and New Jersey. It is believed that by establishing branches in other large cities, including certain large inland cities, the number called from the ranks of the unemployed to profitable occupations would be greatly increased.

Such care was exercised in directing people to places of employment and in furnishing information that no complaint was made to the Division of nonarrivals or inaccuracy in information imparted.

The Division reports a growing tendency on the part of laboring men to seek farm work as a means of obtaining a livelihood, and it has devoted its principal efforts to creating a sentiment in favor of farm life and farm work.

IMMIGRANT STATIONS.

Generally speaking, progress with the construction of stations at the several ports has been extremely slow. At Galveston the final plans have not been accepted because of the difficulty encountered in bringing the cost of a proper structure within the appropriation. At New Orleans the site has been finally accepted, and preparations for construction are now being made. At Charleston, S. C., the ground has been selected, and the architects are now at work. At Baltimore the site has just been selected, and the work is entirely under the control of the Treasury Department. At Philadelphia the site has been selected and paid for, but the appropriation on hand is probably insufficient and substantially little progress has been made. At Boston a site was selected and paid for, but immediately afterwards the

legislature of the State of Massachusetts authorized a change in the harbor line, and considerable time has been lost in an effort to exchange the lot acquired for another on the proposed new line. At San Francisco the new station on Angel Island has been fully installed, and appears to be complete and adequate to meet every reasonable demand. At Ellis Island the station is, generally speaking, in good condition, but owing to the concentration of immigration at that point it is really inadequate to the demand. If immigration increases, the question will have to be met whether very considerable improvements shall be made at Ellis Island or immigration shall be diverted to other ports by effective measures looking to that end. If the latter course is adopted, it may serve to promote the general distribution of immigrants, which is now recognized to be desirable. Even under existing conditions, substantial improvements must be made for the accommodation of immigrants.

In the same connection it must be admitted that at many other points very inadequate provision exists for the detention of immigrants and persons held for deportation. At Seattle, for instance, the rented quarters do not contain sufficient space for the separation of different classes of detained persons. This is a serious condition, and it is strongly urged that an appropriation be made for the erection of adequate quarters at that point.

At the smaller points the Immigration Service is frequently compelled to detain people in jail for lack of other quarters. It is apparent that such detention not only imposes great hardship upon people who may prove to be entirely innocent, but frequently results in inflicting lasting injury by the mere force of association.

PROPOSED AMENDMENTS TO LAWS.

Perhaps the time is not appropriate to urge amendments, because the Immigration Commission is about to make its report as the result of an exhaustive examination. It is proper, however, to refer to a few suggestions offered by Commissioner Williams at Ellis Island. Attention is called to the fact that it is common practice to have alien employees of vessels go on shore without being subjected to the examination required by the immigration law, and that this privilege is not infrequently abused. Again, the commissioner recommends that the fine imposed upon steamship companies for bringing in persons afflicted with a loathsome or dangerous contagious disease should be increased from \$100 to \$200. Not only is the presence of immigrants so afflicted dangerous after their arrival, but it is calculated to subject all immigrants upon the vessel to the danger of contagion. Furthermore, those who are subject to these diseases are put to useless expense and hardship and the entire service suffers an unnecessary cost and burden. Again, the commissioner

recommends that a competent immigrant inspector, and perhaps also a surgeon, be placed on board every vessel which brings large numbers of immigrants to our shores. The opportunity for careful observation, and for the detection of ailments which it is sometimes difficult to ascertain by one examination, would certainly prove of very great value to the service.

Finally, I wish to call attention to one phase of the administration of the immigration law which works great hardship and frequently puts upon the service a great burden. I refer to the separation of families, which so frequently results from an enforcement of the law as it now stands. It will probably be impossible to relieve the situation altogether, but no doubt a more equitable system could be adopted. It may be accepted that it is the purpose of the law to keep families together and not to separate them. In other words, the parent should be given an opportunity to fulfill his obligation to support and to bring up the members of his family. If an entire family arrives, some of whom must be excluded under the law, it may be subject to doubt whether those of its members who may be admissible as individuals ought not in certain cases to be rejected with the rest. The mere circumstance that those who are sound are willing to abandon those who are unsound seems in itself to furnish persuasive ground for their rejection. This can perhaps be regulated by the administrative officers without modification of the law. On the other hand, when only a representative member, as, for illustration, a father, asks to be admitted, it would seem that his case ought not to be determined upon his examination alone. He comes as the pioneer, and as a rule he will very soon be followed by the dependent members of his family. Having acquired the privilege to be here, sometimes by means of naturalization, at other times without it, he has a status which makes it extremely difficult to deny the admission of members of his family, however unfit they may be under the law. It appears to me that, having been admitted, some weight must be given to his right to support and to protect those who are necessarily dependent upon him. And in view of this right so acquired I suggest that some inquiry into the character of his family ought to be made at the time of his entry. If he comes alone, he ought to be prepared, by some method to be provided, to satisfy the authorities of the character and condition of those whom we may be subsequently asked to admit, and whose cases will necessarily be strengthened by the fact of his admission. In other words, experience with the cases that are presented upon appeal impresses me with the fact that the unit of the family ought to be more regarded than the letter of the law seems now to admit of, and that there ought to be a broader inquiry into the status of the whole family and a more general application of the rule of the law to the family as such.

DIVISION OF NATURALIZATION.

During the year there have been filed in the clerks' offices of the various courts exercising naturalization jurisdiction a total of 222,264 papers, consisting of 167,226 declarations of intention and 55,038 petitions for naturalization. This represents an increase, as compared with the number of declarations filed during the next preceding year, of 21,432, and a corresponding increase in the number of petitions of 11,877. For the same period 39,206 certificates of naturalization were issued, or 834 more than in the fiscal year 1909. The courts denied 7,781 petitions for various reasons, the majority for failure to comply with provisions of the law, but 159 because of immoral character, 1,634 for failure to produce competent evidence, 440 for ignorance of American institutions, 349 for insufficient residence, and others for miscellaneous reasons. The denials exceeded those of last year by 1,440.

As compared with the number of courts exercising naturalization jurisdiction in 1909, there was an increase of 70 state and 10 federal courts, making the totals of each 2,247 and 227, respectively. The proportions in which the naturalization business was handled by those two classes of courts are represented by the following figures: Declarations filed in state courts, 106,836; in federal courts, 60,390; petitions filed in state courts, 39,977; in federal courts, 15,061; certificates issued by state courts, 28,126; by federal courts, 11,080.

For various reasons, 397 certificates of naturalization were canceled by the courts upon proceedings instituted by the Department of Justice. At the close of last year 292 such cases were pending and during the year 295 were reported to the United States attorneys, 5 were dismissed by the courts, and 324 are still pending.

Nearly one-half of the entire naturalization business of the United States was transacted in the courts of six States—Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania—and between one-fifth and one-fourth in the courts of New York City and Brooklyn. The bulk of the increase in naturalization as compared with that of last year occurred in the federal and state courts in New York City and Brooklyn during the last two quarters, and was due in a measure to the allowances made to the clerks of those courts for additional clerical assistants. The cost of additional assistants aggregated \$8,598.92, and the apparent resulting increase in fees transmitted to the Government was \$23,708. The statutory limitations on the granting of allowances from the specific appropriation made it impossible, however, to afford sufficient relief to completely silence the complaint that many persons who desire to file naturalization papers in those courts are subjected to delay and the necessity

of making repeated visits to the clerks' offices. As only some six or eight courts would be affected by such a change, this difficulty could probably be most effectively met by removing the limitations now prescribed in the law and permitting clerks of courts to retain one-half of the entire amount of fees collected, the amount so retained being made chargeable with all expenses incurred by them in discharging the various duties imposed upon them by the law.

The clerical force in the Division of Naturalization and the examiners in the field service must be increased to dispose promptly and effectively of the large addition to the papers filed and cases maturing for investigation and hearing.

The total expenditures on account of the Naturalization Service, consisting of \$46,121.04 for the Division, \$108,606.76 for the field service, \$8,598.92 for assistants to clerks of courts, and \$13,089.26 for printing for the courts, aggregated \$176,415.98. There was received from the fees collected the sum of \$221,766.38. Thus the Government was fully reimbursed for its expenditures on this account and received besides the sum of \$45,350.40.

Recommendation is again made for legislation that will provide for a review by appeal or writ of error of the decisions of the courts of original jurisdiction, so that conflicts necessarily arising may be reconciled.

BUREAU OF CORPORATIONS.

REPORTS PUBLISHED.

During the past fiscal year the Bureau of Corporations has continued to secure and publish information on industrial corporations for the use of the President and Congress, and the public.

In July, 1909, the Bureau published Part II of its Report on Transportation by Water in the United States. Part I, previously published, had described the physical characteristics of the waterways of the United States and the floating equipment. Part II set forth the facts of domestic water-borne traffic, stated certain conclusions therefrom, and pointed out lines of possible waterway improvement. These reports have been in constant demand, especially among the numerous associations interested in waterways.

In December, 1909, the Bureau published Parts IV and V of its Report on Cotton Exchanges, concluding therewith the work on that subject. These parts dealt with the effect of future contracts and of producers' organizations on prices of cotton. This entire report was largely used in the congressional debates and hearings on numerous bills relating to the regulation of speculation in farm products.

On July 6, 1910, the Bureau published Part II of its Report on Taxation of Corporations. This part dealt with the Middle Atlantic States—New York, New Jersey, Pennsylvania, Delaware, and Maryland—and also with the District of Columbia. Its arrangement was uniform with that of Part I, on the New England States, previously published, thus allowing the comparison of various state systems. The demand for this report has been very large and of a character that indicates its wide public and private usefulness, as is shown by a resolution adopted by the International Tax Association Conference of 1909, urging the continuance of the work. Reports on other sections of the country are now being prepared, and it is hoped ultimately to cover the majority, if not all, of the States, concluding the series with a comparative summary of state corporate taxation and the general principles involved, and conclusions to be drawn therefrom. The question of taxation is now so active that such a series of studies assembled in concise form, readily available to the public and state officials, will evidently be of much value.

PENDING INVESTIGATIONS.

At the end of the fiscal year the Bureau had on hand, as work still pending, investigations into the lumber, steel, and tobacco industries, the International Harvester Company, transportation by

water in the United States, and the concentration of water-power ownership, as well as corporate taxation. The investigation of the lumber industry has, by reason of the great importance of the subject, been given precedence, and it is expected that a report thereon will be issued in the latter part of December, 1910, or the early part of the succeeding January.

POLICY OF CORPORATE REGULATION.

Reliable information regarding business transactions is the first requisite to establish and enforce proper regulation. It has been peculiarly the work of the Bureau of Corporations to obtain such information. It has been its business, also, to put these facts in such concise, clear, and reliable form that every citizen can use them. These basic facts of business have been increasingly used in legislative and administrative action. Far more important, the statement of these facts has been an effective check upon improper business methods. The publicity given by the Bureau's reports on various industries has been frequently marked by the disappearance of railway rebates, unfair methods of competition, and divers forms of business oppression. Statements volunteered by numerous small business concerns furnish excellent evidence of this.

Such results have been possible only by the Bureau's use of the utmost care in securing its information. Considerable time has been necessary to complete each of its reports, since accuracy and completeness are essential in order that the information may be absolutely reliable. Probably the most effective single feature of its work is the reduction of vast masses of business facts to a few very important and plainly stated conclusions, in order that those conclusions may be brought before the public through the one effective and accepted means of publicity.

For this work the Bureau has developed through a series of years a highly trained force of specialists. It has had, as an almost invariable rule, access to the books of large corporations, and, more encouraging still, the increasing voluntary cooperation of corporate managers.

The working value of such publicity has thus been proved. It remains to extend its benefits as widely as possible. There should be an active and permanent system of publicity under the Federal Government, by which all important industrial corporations engaged in interstate commerce shall report to one federal agency the essential facts of their business. Federal action of this sort is necessary because no state system can comprehensively cover the subject. Thus, with a central agency of business information in continuous

operation, the country would have reliable information on the management of our commercial forces, public opinion would be afforded a basis of intelligent action, unjust prejudice would be removed, and business interests would have a source of information on corporate facts covering the entire country. There would be a permanent and recognized point of contact between the Government and the managers of corporations. The relations of corporate action to public interest could be considered, cooperation could be increased, and uniformity of corporate accounting could be secured.

BUREAU OF LABOR.

REPORTS PUBLISHED.

During the fiscal year ended June 30, 1910, the Bureau published the following reports: Investigation of Telephone Companies; Increase in Cost of Food and Other Products; Civil-Service Retirement in Great Britain and New Zealand; Pension Funds for Municipal Employees and Railroad Pension Systems in the United States; and the Report on the Strike at Bethlehem Steel Works, South Bethlehem, Pa. A compilation of Laws Relating to Compensation for Industrial Accidents in Foreign Countries was also published, being part of the forthcoming Twenty-fourth Annual Report (Workmen's Insurance and Compensation Systems in Europe).

BIMONTHLY BULLETINS.

The bulletins of the Bureau have contained, in addition to one or more special articles in each number, digests of recent reports of state bureaus of labor statistics, digests of recent foreign official statistical publications, decisions of courts affecting labor, and laws of various States and of the United States relating to labor.

The special articles included in the bulletins for the past fiscal year are as follows:

Bulletin 83: Women's Trade Union Movement in Great Britain.

Bulletin 84: Accidents to Railroad Employees in New Jersey, 1888 to 1907, and The Minnesota Iron Ranges.

Bulletin 85: Review of Labor Legislation of 1908 and 1909, and Compilation of Laws of Various States Relating to Labor, Enacted Since January 1, 1908.

Bulletin 86: The Canadian Industrial Disputes Investigation Act of 1907; Phosphorus Poisoning in the Match Industry in the United States; List of Industrial Poisons; and Publications of International Associations for Labor Legislation.

Bulletin 87: Wholesale Prices, 1890 to March, 1910, and Wages and Hours of Labor of Union Carpenters in the United States and in English-speaking Foreign Countries, during the First Quarter of 1910.

Bulletin 88: Cost of Living of Families of Moderate Income in Germany in 1907-8.

REPORTS TRANSMITTED AND IN COURSE OF PREPARATION.

The report on workmen's insurance and compensation systems in European countries is partly in type and will be issued shortly in two volumes, constituting the Twenty-fourth Annual Report of the Commissioner of Labor. Sickness, old age, and unemployment are considered in this report, as well as provisions in case of injury from accident.

Part I of the report on the condition of woman and child wage-earners in the United States was transmitted to the Senate in June, 1910, and will appear shortly as a Senate document. This part of the report relates to employment in the manufacture of cotton textiles, and covers four New England States and six Southern States. Other parts of this report will soon be ready for the printer, and will consider the clothing, glass, and silk industries and various special aspects of the employment of women and children.

A report on Civil-Service Retirement in New South Wales, similar in character to the report on Civil-Service Retirement in Great Britain and New Zealand, referred to above, has been transmitted to the Senate, and reports covering other countries are in course of preparation.

Work is in progress on a report showing the causes of disability and death as disclosed by reports on workmen's insurance and benefit funds in the United States, on a study of the wage scales and rates of wages in the tin-plate and sheet-steel industries, 1907 and 1909, and on the quinquennial report of the Commissioner of Labor on industrial and commercial conditions in Hawaii. The work of collecting material for a report on industrial education has begun. The purpose of this investigation is to secure information concerning schools that seek to furnish training for the skilled and unskilled occupations. The relation of these schools to the public schools and to industry will be especially considered, as well as the nature and methods of instruction, the requisites for positions as teachers, the courses offered, cost to pupils, financial support, and the industrial and economic value of the training given.

GOVERNMENT WORKINGMEN'S COMPENSATION ACT.

Under the law granting compensation to certain federal employees injured in the course of their employment, 2,568 claims were adjudicated during the year ended June 30, 1910, of which 122 were for deaths, the remainder being claims in nonfatal cases. Of the claims in nonfatal cases, 2,365 were found to be established, while 81 failed to show their right to compensation. In 23 cases of fatal accident no claim could be allowed, in the majority of instances because the claim had not been submitted within ninety days, as required by the statute.

The number of claims pending adjudication at the beginning of the fiscal year was 41. At the close of the year 16 newly received claims awaited action.

In connection with the administration of the compensation act, provision is also made for the reporting of injuries of all classes of employees of the Government not covered by the compensation act

which occur in the course of employment when the injuries cause incapacitation for one day or longer or result in immediate death.

Reports as to 4,922 injuries to government employees, including all classes, both those within and without the scope of the act, were received during the year. Injuries, the duration of which was fifteen days or less, to employees of the Isthmian Canal Commission, are not included in the foregoing figures, it being understood that data relative to such injuries will be transmitted by the Commission at a subsequent date.

Experience having shown the need of a revision of the regulations governing the application of the act which were formulated prior to its taking effect on August 1, 1908, also the need of closer cooperation in matters relating to its administration, each of the several executive departments and independent branches of the service affected by the operation of the law was invited to participate in a conference called for the purpose of framing new regulations. Copies of the tentative regulations adopted by the conference have been forwarded to each department and independent office included in the scope of the act, with a request that there be submitted any suggestions or comments that might appear appropriate. In addition to preparing the draft of new regulations, the conference adopted, for submission through the proper channels, a number of recommendations concerning desirable amendments to the present law.

BUREAU OF MANUFACTURES.

Since the organization of this Bureau, in February, 1905, each year has been marked by progress that has been logical and closely related to the increasing interest of manufacturers and merchants in the export trade of the country. This interest is plainly indicated by the volume of correspondence with the Bureau, which during the last fiscal year exceeded that of the preceding year by 20 per cent, over 36,000 letters and 10,000 miscellaneous papers and circulars having been received. This correspondence embraces every field of industrial activity and every avenue of commercial development.

PUBLICATION OF TRADE OPPORTUNITIES AND CONFIDENTIAL BULLETINS.

The various methods which have been developed by the Bureau for fostering and extending trade continue to broaden in scope and expand in usefulness. The publication during the year of 1,567 foreign-trade opportunities in the Daily Consular and Trade Reports and the issuance of 119 confidential circulars transmitting special information to interested firms in regard to demands abroad for products as various as war ships and harness or locomotives and shoes have been undoubtedly valuable factors in a material extension of our foreign trade. The value of this confidential work would be further increased, however, should provision be made by Congress for the acquisition of photographs, blueprints, drawings, specifications, and samples in sufficient numbers to make it possible for the Bureau to transmit such material promptly to classified firms. At present the meager facilities of the Bureau compel a system of distribution of this confidential information which causes delay, often defeating the purpose of the work and inviting serious criticism.

WORLD TRADE DIRECTORY.

An important part of the equipment of the Bureau has been the development in its files of a directory of the names of business houses in foreign countries handling imported merchandise. The authority of Congress for the publication of this directory was granted in the sundry civil appropriation act for the current fiscal year, and the volume will be issued early in 1911. The price of the book was fixed at \$5, and subscriptions to the number of 2,300 have already been recorded. The publication of this directory will place at the service

of American firms a collection of names of the utmost value in their foreign trade, and will relieve the Bureau of a burden of correspondence which contains urgent requests for the material embodied in the book. It has heretofore been impossible to comply with many of these requests when they implied the copying of long lists of names, the clerical force of the Bureau being inadequate to the task.

COMMERCIAL AGENTS.

The special agents of the Bureau, who are now designated as "commercial agents," have been active in investigations in Europe, Central and South America, and the West Indies, their work covering general trade and industrial conditions and the special subjects of cotton, wool, and jute manufactures, laces, flour, the shoe and leather trade, cotton seed and its products, the Argentine Exposition, and other important matters. Recommendation is made for the extension of this work in scope and in the number of agents employed. Attention is invited to the fact that in 1906 Japan had 85 foreign agents investigating trade conditions abroad.

Furthermore, the need is now felt for the use of such agents here in the United States to consult with individual manufacturers and merchants, and with trade organizations, chambers of commerce, and similar bodies. The time has come when it is necessary to preach the doctrine of trade expansion and to make clear the essential present need of such expansion. The Bureau has already in its possession a volume of useful and pertinent facts in regard to foreign markets and the theories and principles which affect foreign trade, and it is plainly apparent now that a campaign of education and exposition by specialists through personal relations with American traders and manufacturers will supplement the work abroad in the most effective way. The present period is a most significant and important one with respect to the extension of our foreign trade in manufactured products. As our population increases the volume of exports of raw materials and foodstuffs is relatively materially reduced, and unfavorable trade balances, if they are to be avoided, must be prevented by the continued extension of our sales of manufactured products abroad. A study of statistics indicates that the relations between raw and manufactured exports are changing and a gratifying relative increase in manufactured exports is shown. To keep and extend this trade it will be necessary to fortify and promote it by every legitimate method, and a liberal support of the activities of the Bureau of Manufactures is strongly recommended. An appropriation of \$60,000 is asked to continue the work of commercial agents for the coming fiscal year.

TARIFF DIVISION.

The Tariff Division has carried on its important work of publishing translations of customs tariffs of foreign countries, a labor which is not duplicated in any other branch of the Government. This Division is essentially a publicity bureau of facts relating to tariff rates and to changes, either recent or impending, in such rates. It has no function of criticism or the development of theories of customs regulations, and it supplements in a very important manner the other lines of investigation in the Bureau. A wide field is open for the exercise of the technical knowledge available in this Division. A voluminous correspondence is maintained in supplying inquirers with information in regard to numberless details connected with tariff matters. It is hoped to further develop the service in this branch of the Bureau by the publication of special bulletins containing tariff facts relating to selected industries or products, and reports comprising current regulations affecting foreign trade, including such matters as port charges, tonnage dues, methods of handling cargoes, and similar factors in relation to exports.

The present appropriation of \$8,000 is inadequate to permit this very advantageous extension of service, and the Department recommends that for the coming year \$12,000 be made available. This sum can be judiciously expended to secure full return for the amount involved.

The tariff publications during the year include the French tariff, both as originally proposed and as amended in the Chamber of Deputies, the Customs Tariff of Mexico, Consular Regulations of Foreign Countries, and an extensive supplement to the compilation of the rates of duty on machinery and vehicles in foreign countries. To the above should be added a number of smaller supplements to the customs tariffs of Bahamas, Australia, Germany, and Italy. In addition to publishing separate tariffs and compilations, the Tariff Division made public, through the medium of Daily Consular and Trade Reports, much information bearing upon the subject.

CONSULAR DIVISION.

The editorial work of the Consular Division is becoming more exacting and increases in volume with the increasing interest shown by consular officers by their more frequent reports in regard to our foreign trade. The small increase in the personnel of the Division asked for by the Department is fully justified by the growth of the work. The appropriations for our consular service are now over a million dollars, and the Bureau of Manufactures affords the principal outlet for the reports of the consuls. It is obviously good business policy to equip this Division adequately so that the valuable material received from abroad may not be delayed in publication.

COMMERCIAL RELATIONS.

The existing law requires the presentation of the annual reports of consular officers in the form of a yearly volume known as "Commercial Relations of the United States," a limited edition only being published, with the result that the work is little known and comparatively unnoticed by the public. The prompt publicity which is now given through the pages of the Daily Consular and Trade Reports to the fresh and valuable information contained in these annual reports by consuls renders the issuance of this work in its present form of doubtful value.

PUBLICATIONS.

Fifteen monographs were issued by the Bureau during the year in addition to tariff publications. The question of the advisability of abandoning the gratuitous distribution of these publications has been considered in previous reports, and attention is again invited to this matter.

POSSIBILITIES FOR THE BUREAU.

The work performed by the Bureau of Manufactures, although little more than well begun, is considered one of the vital functions of the Department of Commerce and Labor, and no branch of the Federal Government offers a more promising opportunity for the useful extension of the public service. It should be developed to a standard which shall challenge favorable comparison with similar governmental activities in foreign lands. There is ample evidence of the value which our trade rivals ascribe to such work. Our expenditures for this service so far are almost trifling when we consider the vastness of the field which should receive attention if our foreign trade is to be increased rapidly and in a manner to retain in world commerce our proper relative position.

BUREAU OF STATISTICS.

FOREIGN COMMERCE OF THE UNITED STATES.

The foreign commerce of the United States in 1910, while showing a larger total than in any earlier year except 1907, exhibits certain characteristics which call for serious consideration. While the imports were the largest in the history of the country, the value of exports fell below that of 1908 or 1907 despite the fact that prices, especially of natural products, were especially high in 1910. The total value of merchandise imported in 1910 was \$1,556,947,430, against \$1,434,421,425 in the former high-record year, 1907. The total value of domestic and foreign merchandise exported in 1910 was \$1,744,984,720, against \$1,860,773,346 in 1908 and \$1,880,851,078 in 1907, the high record years in exports. The imports thus exceeded by \$122,526,005 the largest total of any earlier year, while the exports fell \$125,827,492 below the annual average of 1907 and 1908.

While the increase in imports occurred chiefly in manufacturers' materials, which exceeded in 1910 those of any earlier year and thus suggests unusual activity among the manufacturers of the country, the decrease in exports occurred chiefly in foodstuffs, which formed a large share of our export trade in those years in which the United States was the world's greatest exporter of domestic products. The total value of foodstuffs exported in 1910 was, despite the unusually high export prices, but \$369,087,974, against \$545,473,695 in 1900, ten years earlier, and formed but 21.59 per cent of the total domestic exports, against 39.80 per cent in 1900, 42.21 per cent in 1890, and 55.77 per cent in 1880.

DECLINE IN EXPORTATION OF FOODSTUFFS.

This decline in the exports of foodstuffs occurred in all the important articles forming that great group. Wheat exports, including those sent in the form of flour, aggregated but 87 million bushels, being little more than one-half the average annual export of the past twenty years and actually less than in any of the past thirty years, save the exceptional year 1905. Corn exports aggregated but 38 million bushels, being little less than one-third the average annual exports of the past twenty years. The value of meat and dairy products and food animals exported was but 143 million dollars, against 254 millions in 1906 and an annual average of 222 millions in the past ten years.

This falling off in the exportation of foodstuffs is apparently due, in a large part at least, to increased consumption at home, rather than to a decline in production. The wheat crop of 1909, the chief source of the 1910 exports of that article, was, with a single exception, the largest in our history, and this is also true of the corn crop of 1909; and while the supply of food animals is somewhat diminished by the gradual breaking up of the great stock ranges in the West and the transfer of the live-stock industry to farms, the relative decline in exportation of meats and food animals has been much greater than that in the number of food animals as reported from year to year by the Department of Agriculture. This shortage in the surplus of the greatest food-exporting country of the world, the United States, has been met in the world's markets by increased production and exportation of meats from Australia, New Zealand, and South America; of wheat from Russia, Roumania, Australia, Argentina, Canada, and India, and of corn from Argentina, Russia, and Roumania.

INCREASE IN EXPORTATION OF MANUFACTURES.

The reduction in the exportation of foodstuffs from the United States has been offset, in part, by an increase in the exportation of manufactures. The value of domestic manufactures exported in 1910 was larger than ever before, aggregating 767 million dollars, against 485 millions in 1900, 179 millions in 1890, and 122 millions in 1880; and forming, in 1910, 44.85 per cent of the domestic exports, against 35.37 per cent in 1900, 21.18 per cent in 1890, and 14.78 per cent in 1880. These figures include the two great groups "Manufactures ready for consumption" and "Manufactures for further use in manufacturing," but in each of them the total of 1910 is larger than in any earlier year, and the share which they respectively form of the total exports is also larger than ever before. Manufacturers' materials (chiefly cotton) show a large total, 566 million dollars, though somewhat below the figures of 1907 and forming a smaller percentage of the exports than in certain earlier years.

CHANGE IN TRADE CURRENTS.

With this change in the character of exports, from foodstuffs to manufactures as the leading feature thereof, has come a perceptible change in the currents of trade. Exports to Europe, the great food-importing section of the world, now form a much smaller share of the total than formerly. In 1880 the exports of the United States to Europe formed 86.1 per cent of the total; in 1890, 79.74 per cent; in 1900, 74.6 per cent; and in 1910, 65.1 per cent. The actual value of the merchandise exported to Europe in 1910 was 1,136 million

dollars, against an annual average of 1,260 millions for the three-year period 1906-1908, inclusive. On the other hand, with the steadily increasing share which manufactures form of the exports, the sales to those sections of the world which are large importers of manufactures show, in all sections except Asia, a material increase and a marked gain in their share of the total. To North America the exports of 1910, 385 million dollars, were larger than in any earlier year of our trade, and formed 22.1 per cent of the total exports, against 13.45 per cent in 1900, 10.98 per cent in 1890, and 8.31 per cent in 1880. To South America the exports of the year were 93 million dollars, or two and a half times as much as in 1900, and formed 5.3 per cent of the total, against 2.79 per cent in 1900. To Oceania the exports of 1910 were 51 million dollars in value, a total materially in excess of any earlier year.

DECLINE IN EXPORTS TO THE ORIENT.

To the Orient the exports of 1910 showed a continuation of the marked decline which has characterized that feature of our foreign trade during recent years. The exports to that part of the world, especially those to China and Japan, which made their highest record in 1905, have since that time steadily declined until they were, in 1910, less than half those of 1905. The total exports to all Asia in 1910 were slightly less than 61 million dollars, against 128½ millions in the high-record year, 1905, and an annual average of 80 million dollars during the decade 1900-1909, inclusive. To Japan the exports of 1910 were but 22 million dollars, against 52 millions in 1905 and an annual average of 31 millions during the decade 1900-1909; to China the exports of 1910 were 16 million dollars, against 53½ millions in 1905 and an annual average of 25 millions during the decade 1900-1909; to Hongkong the exports of 1910 were but 6½ million dollars, against 10½ millions in 1905 and an annual average of 8½ millions in the decade 1900-1909; while to Egypt, Aden, British East Indies, Dutch East Indies, French East Indies, Siam, and Asiatic Russia the figures of 1910 were below those of 1909. To Japanese leased territory in China the exports have fallen from \$8,198,896 in 1908 to \$235,768 in 1910. The official records of China and Japan show a greater decline in imports from the United States than in those from other occidental countries. Imports into Japan from all Europe in 1909 show a decline of 16 per cent compared with the preceding year, while those from the United States in the same year show a decline of 30 per cent. The official returns of Chinese trade in 1909 show, in terms of native currency, a decline in imports from all Europe, including Great Britain and the European ports of Russia, of less than 1 per cent when compared with 1908, while those from the United States show a decline in the same period of 20 per cent.

A portion of this falling off in the oriental demand for merchandise from the United States is the result of general causes. The high prices of American cotton have, on this as on former occasions, been followed by a decline in importations of raw cotton from the United States into Japan and an increase in her purchases of cotton from India, and in a decline in the importation of cotton goods into China and an increase in her importation of cotton yarns from India. The high prices of wheat have been followed by a decline in our exportation of flour to Japan, China, and Hongkong, and a general decline in imports of flour into both Japan and China. The development in recent years of great oil-producing fields in sections of the world lying much nearer than our own to China and Japan has sharpened competition and been followed by a reduction in the share supplied by the United States in the oil consumption of the Orient. In certain other lines of manufacture, however, notably lumber, chemicals, machinery and other manufactures of iron and steel, the exports to China and Japan in 1910 show greater values than in 1909. The exports of cotton cloth from the United States to China in 1910 were but 95 million yards, against 140 millions in 1909, 499 millions in 1906, and 475 millions in 1905.

INCREASED IMPORTATION OF MANUFACTURERS' MATERIALS.

The imports into the United States, as already indicated, were larger in 1910 than ever before, amounting to \$1,556,947,430, an increase of about 80 per cent over those of 1900. The chief growth occurred in manufacturers' crude materials, which amounted in 1910 to 566 million dollars, against 276 millions in 1900, an increase of over 100 per cent; manufactures for further use in manufacturing, which amounted to 287 million dollars, against 134 millions in 1900, an increase of more than 100 per cent, and finished manufactures, which amounted to 366 million dollars, against 203 millions a decade ago, an increase of about 80 per cent; while foodstuffs amounted to 326 million dollars, against 231 millions a decade ago, an increase of about 40 per cent.

AMERICAN MANUFACTURES AND THE FOREIGN MARKETS.

It is thus apparent that the great growth in importations which has characterized our commerce in recent years is largely due to an increasing demand for materials from abroad for use in the manufacturing industry. It is equally apparent that the chief growth in exportation is in manufactures, which have increased about 60 per cent in the last decade, while foodstuffs declined about 30 per cent, and exports of manufacturers' crude materials were slightly less in 1910 than in 1907. It seems also probable that the future growth

of our export trade must almost necessarily be chiefly in manufactures. While the United States may be expected, through irrigation, drainage, and intensive cultivation, to sufficiently increase its agricultural production to meet for many years the requirements of its increasing population, it seems scarcely probable that the surplus of foodstuffs for exportation will materially increase, but rather the reverse; and while a single article of manufacturers' raw materials—cotton—may continue to increase as an article of exportation, the chief reliance for growth in the export trade must probably be upon manufactures.

It is thus important, if we are to continue our status as an exporting nation, that our manufacturers give serious attention to the work of enlarging their fields of operation in foreign countries. In this effort they will meet with sharp and constantly increasing competition from other manufacturing sections of the world. Our chief success in the exportation of manufactures thus far has occurred in those lines in which the manufacturers were willing to send their own expert representatives into the foreign markets to study conditions and supply the goods in condition and form suited to the local markets. Governmental aid in general studies of trade conditions in various parts of the world must prove valuable by indicating existing opportunities, but complete success in the various lines will be greatly facilitated by personal studies through expert representatives of those desiring to enlarge their foreign trade, and a willingness on their part to supply the manufactures in form and upon terms suited to the requirements of the local markets of the countries in which they are respectively offered.

The prospective opening of the Panama Canal will make the manufacturing section of the United States the nearest source of supply to the countries on the western coast of South and Central America, which now take but a small percentage of their imports from us, and should also facilitate our exports to the Orient; though in all of these markets complete success can only be obtained by the methods above indicated, of personal attention on the part of our manufacturers and a willingness to supply the requirements of those markets in forms and upon terms suited to local conditions and customs.

DECLINE IN EXCESS OF EXPORTS OVER IMPORTS.

The excess of exports over imports in the fiscal year 1910 was less than in any year since 1896, having been \$188,037,290, against \$666,431,554 in 1908, when the excess made its highest record. This marked decline in the excess of exports over imports is due to a combination of unusually low exports and unusually high imports in the year under consideration. Exports in 1910 were 116 million

dollars below those of 1908, while the imports of 1910 exceeded those of 1908 by 363 million dollars, the year 1908 having been, as a result of the financial depression of 1907, one of exceptionally large exports and exceptionally small imports. It seems improbable, however, with the decline in our surplus of foodstuffs for exportation and the increasing demand of our manufacturers for raw materials from abroad, that the annual excess of exports over imports will, in future, equal that of the last decade, during which the excess of exports averaged 493 million dollars per annum.

WORK OF THE BUREAU.

The Bureau of Statistics, which records the foreign commerce of the United States and such features of the internal commerce as is possible under the limited appropriations for that service, has devoted much attention during the year to a detailed analysis of the foreign trade in response to special calls for information upon this subject. The enactment of a new tariff law in the early part of the fiscal year was the occasion of an unusually large number of calls upon the Bureau for detailed information regarding both imports and exports, especially the former. These inquiries related to the importation, country of origin, port of entrance, duties collected, and ad valorem rates of duty upon thousands of different articles and classes of articles, with reference to both the new tariff law and prior laws of this character, and included requests for comparative statements in detail extending back over a long term of years. These inquiries, which required a large addition to the current work of the Bureau, were accompanied by requests for the quarterly publication of statements of imports for consumption, which in the past have been published annually only; and these requests have been complied with and preparations made for the quarterly publication of the imports for consumption, stating in detail import values and duties collected on the thousands of different articles enumerated in the tariff law. This increased interest in the details of the import trade, coupled with increasing demands for information regarding the export trade and the distribution of the various articles forming that trade, has added largely to the permanent work of the Bureau, and it has therefore become necessary to ask a material increase in its working force, to which no additions have been made during the past three years, despite the steady growth in the foreign commerce and in public demands for more detailed information with reference thereto. The marked growth in the exportation of manufactures, coincident with the steady decline in the exportation of foodstuffs, results in numerous inquiries from the manufacturers and exporters of the country, as well as others interested in the subject from the economic standpoint, for information regarding trade opportunities abroad, the consuming

power of the various countries, the sections of the world from which they at present draw their supplies, especially manufactures, and the requirements for the enlargement of our exports of manufactures, which, it is hoped, may offset the declining outward movement of foodstuffs. Meantime demands are being made upon the Bureau for a further enlargement of the scope of the internal-commerce reports, which now record domestic movements on the Great Lakes and, in some detail, the movements to and from the great interior centers. A growing interest in the development of transportation facilities along the Atlantic and Gulf coasts has resulted in many inquiries for detailed information regarding the coastwise commerce of the United States, of which no detailed periodical record is at present made or can be made without some additional appropriation therefor. A small increase in the appropriation for work of this character has been asked for in the estimates of expenses for the coming fiscal year.

BUREAU OF STANDARDS.

The work of the Bureau of Standards during the past year has been one of activity and interest. The testing, of which two-thirds was for the Government, increased 27 per cent over the preceding year; 48,488 tests were made, covering a wide range of standards, measuring instruments, and materials. Much of this work particularly bears upon the efficiency of purchasing, as the tests are used to determine the quality and suitability of materials purchased under contract. The work also furnishes data required to place the purchase of materials upon a scientific basis. The new industrial applications of scientific knowledge bring to the Bureau new kinds of standards, measuring instruments, and materials for test. The Bureau's facilities and experts are thus taxed to their utmost to keep pace with growing needs. The researches conducted by the Bureau upon methods of measurement of length, mass, capacity, density, time, heat, light, electricity, and the properties of materials emphasize the central position of precision as a factor in science and industry.

ELECTRICITY.

In order to secure international uniformity to a high degree of precision in the three fundamental electrical units, namely, the ohm, the volt, and the ampere, the Bureau arranged for an international investigation in cooperation with the Physikalisch-Technische Reichsanstalt of Germany, the National Physical Laboratory of England, and the Laboratoire Central d'Electricite of France. Preparatory to this, the Bureau had conducted an extended experimental investigation upon the subject. The delegates came to Washington and with representatives of the Bureau of Standards carried out, during April and May, 1910, a careful series of experiments on the silver voltameter. Measurements on standard cells and standards of resistance were made, intercomparing those brought from the foreign national laboratories and those of the Bureau of Standards, and also comparing the types of silver voltameters used in the several countries. The numerical value for the Weston normal cell, to be recommended to the International Committee on Electrical Units and Standards, was agreed upon, and it is hoped will soon be adopted by all civilized countries of the world.

The conductivity and the temperature coefficient of copper have been determined, and the results will be published in the Bulletin.

The work on the absolute measurement of current is nearly completed after several years' careful experimental work. The importance of the accurate measurement of this quantity justifies the utmost care in its determination. The research on the properties of mica in standards of capacity is complete and ready for publication. Special electrical testing instruments, designed and built at the Bureau, are now in use and allow much more accurate and rapid measurement of current, voltage, and power. The methods of measuring magnetic permeability and iron losses adopted afford reliable results. The cooperation of commercial interests should bring about needed uniformity in such work.

At the invitation of the American Mining Congress, the Bureau made a study during the past year of the standardization of electric machines and electric practice in mines. The report is now in press and includes model regulations drafted to meet the technical requirements for such standardization.

PHOTOMETRY.

The incandescent lamps used in the government departments have been inspected and tested by this Bureau. Nearly a million carbon-filament lamps and many high efficiency metal-filament lamps are purchased by the departments jointly, thus securing economy and facilitating inspection. The revised specifications for purchasing lamps, published by the Bureau, are recognized by all manufacturers and have brought about a very desirable uniformity in the manufacture and sale of lamps. Such uniformity is of advantage to both the makers and users. The preparation of lamps to be used as standards is in progress, and the facilities for photometric work of the highest precision have been greatly improved.

WEIGHTS AND MEASURES.

The work in weights and measures has been very active during the year. Besides special researches, the actual tests made in this division numbered 18,972. About 550 length standards and measures of various types have been tested, such as steel and invar tapes, level rods, calipers and meters, lathe screws, yard and meter bars, cement sieves, micrometers, micrometer calipers, and gages.

During the year the Troy pound of the mint was verified. This weight, which was once the fundamental standard of the United States for all purposes, has been preserved at the Philadelphia Mint. The apparent change, only 0.005 grain, from the value given in 1827 indicates a remarkable constancy in eighty-three years. A set of platinum weights calibrated at the Physikalisch-Technische Reichsanstalt of Germany for the work on the fundamental electrical

standards on test by the Bureau showed agreement with the results at the Reichsanstalt within a few thousandths of a milligram. This illustrates the extremely close agreement attained among the standards of those countries which refer their weights to the international kilogram.

Some urgently needed standards for work of moderate accuracy have been prepared upon which the efficiency of nickel plating was tested. Weights made of nickel steel have proven very constant and not easily oxidized.

The density and thermal expansion of alcohol and of its mixtures with water has been carefully studied, correcting the inexact tables now used in alcoholometry by density measurement. The results are of particular importance, as approximately \$200,000,000 of revenue are collected annually on the basis of such tables.

The volumetric testing increased 50 per cent over the prior year and the apparatus submitted, while not yet fully satisfactory, shows a steady improvement. Of the 20,512 pieces examined, 30 per cent were rejected by inspection on account of defects in construction, while 11 per cent of those actually tested for capacity were found to be inaccurate. Volumetric apparatus purchased by the National Government is submitted to this Bureau for approval. Other capacity measures tested included liquid and dry standards for States, city governments, and manufacturers.

The investigation of weights and measures authorized by Congress is of special interest. Two inspectors have visited 87 cities and towns in 27 States and will cover the Western States during the ensuing year. This work has stimulated public interest in local inspection and a higher standard of accuracy and honesty in commercial transactions. This work was intended primarily to assist state and city governments in the improvement of the laws, regulations, and practices concerning the weights and measures used in ordinary trade and commercial transactions. The results have been most gratifying, and demonstrate the great value of proper cooperation between the Federal and State Governments in matters of this kind.

The investigation of the cost per unit weight of commodities purchased in closed containers has developed interesting facts directly bearing on the increased cost of living.

HEAT AND THERMOMETRY.

During the year the volume of testing in thermometry and heat measurements was 25 per cent greater than in the preceding year, with a marked increase in tests requiring the highest accuracy. The work included the testing of some 15,000 thermometers, besides 138 miscellaneous tests and determinations, such as pyrometers, heats of

combustion, physical properties of oils, melting points of refractories, and similar work.

A large number of standardized heat samples were furnished for the standardization of calorimeters used in determining the heating values of fuels. This work has materially assisted in introducing uniformity in the results of tests carried out by industrial chemists and engineers, and on which large fuel contracts were based. Considerable progress has been made in calorimetric investigations, which, when completed, will enable the Bureau to furnish a variety of standardized heat samples, such as sugar, naphthaline, benzoic acid, and other suitable materials; also reliable data on the heats of combustion of the elementary constituents of illuminating and fuel gases for the use of the gas industries, and instructions as to the necessary precautions and order of accuracy attainable with the various gas calorimeters widely used in the industries.

The investigation of the specific heats of calcium chloride brines is of particular importance to the refrigerating industries. The work on application of radiation and optical pyrometers to the temperature measurement of molten metals is of value in foundry operations. The research on the behavior of platinum resistance thermometers at high temperatures, now finding increasing application in this country in the control of temperatures in many industries, is of value in numerous industries using high temperatures. The above investigations were published as technical papers and widely distributed among the industries concerned.

OPTICS.

Many lines of standardization require light sources of known fixed intensity at each wave length. Radiating gases—conducting hydrogen, argon, and helium—have been carefully investigated as such sources and the intensities of the brighter lines of their spectra determined in terms of energy input and gas density. Some results obtained in this new field are of wide interest and application. The relations of luminosity to temperature were investigated and the results published. The tests of photographic lenses, optical glass, refractometer standardizing plates, and spectroscopic tests showed a marked increase. The colored signal glasses for railway and marine purposes now largely depend upon and conform to tests made at the Bureau.

During the year a new vacuum bolometer was constructed, the spectrometric apparatus remodeled, and spectral radiation curves obtained, from which radiation constants were computed. This is the most important problem in radiation at the present time. A research on the reflecting power of metals, just completed, had for its object the exact determination of the spectral reflecting power of

various metals, including tungsten, tantalum, and molybdenum, which are of the highest importance in the incandescent-lamp industry. The results furnish a complete and convincing proof that the high luminous efficiency of such lamps is due to their selective emission in the visible spectrum, and a high reflecting power in the infra-red. A new radiometer and a new quartz spectrometer have been constructed and found to be more sensitive than any yet described in print.

An important research resulted in the development of a new apparatus for measuring light waves to be used as standards. This subject is of fundamental importance, since it underlies optical standardization and research. With the new apparatus the relative length of light waves may be determined with high accuracy and great facility.

POLARIMETRY.

In its polariscopic work this Bureau must produce sugar of high purity under controlled conditions. During the year standard samples of pure sucrose prepared at the Bureau with certificates of analysis were widely distributed for calorimetric and polariscopic purposes.

Satisfactory progress has been made in the determination of the correct basis of standardization of saccharimeters—a vital problem to the sugar industry, as it affects directly the government revenues from sugars as well as the market price of every pound bought and sold. The business of the sugar industry is transacted by means of the saccharimeter, yet no official investigation of the basis of standardization of this instrument has hitherto been made. During the year special apparatus has been developed to attain this end and very pure sugar was prepared from raw sugars of widely different origins and compared with the pure sugar of other investigators in this country and abroad.

The present methods of testing molasses are being improved, a number of unusually dark samples being sent to the Bureau for test. As the tariff is six times the usual duty for imported molasses testing 40 per cent and above, the problem is vital to the customs service. The problem of increasing the accuracy of the sugar tests made at the ports of entry on imported sugar has received much attention and changes in apparatus and methods have been made, with gratifying results. The work of the Bureau has lowered the differences between the five sugar ports to less than 0.2 per cent, a concordance which is quite satisfactory. In all 1,339 polarimetric tests were completed during the year, besides the investigations in progress.

ENGINEERING.

The work of testing of engineering instruments and structural and other materials has steadily advanced. Additional space for the work has been provided and the erection of machines and instruments is now under way in the new laboratory. A 100,000-pound universal testing machine, already erected, has shown accurate and reliable results. The Bureau has also installed a 1,000,000-pound Riehle crushing machine for testing stone, brick, terra cotta, cement, and concrete, and for determining the moduli of elasticity of building materials and structural forms. A 2,400,000-pound Emery machine will soon be installed for investigating physical properties of materials and the constants required by engineers in computing structural designs. The construction of the large Emery machine for testing full-sized structural members and shapes is well advanced and the foundation is in place. Freezing chambers and special furnaces for fire tests of ceramic materials are being built. Investigations are also in progress as to methods of testing torsion, cold-bending, alternating impact, alternating stress, and hardness.

A new method of determining stresses and strains in large structural members used in bridges and buildings has been devised and tested on the Rock Creek Bridge, at Washington, D. C., and on the Ohio River Bridge, at Beaver Falls, Pa. This new method promises fruitful results in testing the safety of bridges and buildings while under construction and without the use of large testing machines. The method is also applicable to a study of lap-welded boilers and the deformation resulting from stresses.

The bureau tests have covered a wide range of metals and structural materials and have been made for all the government departments, and for the Public Printer, Panama Canal Commission, Superintendent of the Capitol, and the Commissioners of the District of Columbia. The number of tests of miscellaneous materials, such as paper, textiles, cordage, belting material, hose, packing, and lubricants, has increased 50 per cent. With special equipment the Bureau is to make investigations and assist in preparing standard specifications for government materials and to aid in the adoption of uniform standards in the industries.

The Bureau tested four times as many engineering instruments as in the previous year, including anemometers, pressure gages, paper testers, and water-current meters. The Geological Survey has transferred to the Bureau the Chevy Chase Lake station for calibration of water-current meters. The station has been improved and an investigation of Price meters is now in progress.

CHEMISTRY.

There has been a large amount of chemical testing of materials supplied under contracts of the General Supply Committee. Related to this is the work of testing important reagents. The systematic reporting of discrepancies to the manufacturers will result in greater care in the manufacture and increased accuracy in the analysis of reagents.

The Bureau cooperates in movements looking to higher standards of excellence of materials whose value largely depends upon their chemical nature and purity. The Bureau is represented on important committees of the American Chemical Society, such as the committee on specifications for rubber goods, the committee on the nomenclature of inorganic compounds, the committee on the analysis of fat and oils, and the committee having general oversight of the various special committees of that society.

The demand for the analyzed and certified standard samples of iron and steel is still increasing, the number distributed having been 717. These are used as a check upon the accuracy of industrial analyses. Two new Bessemer steel standards have been issued, several are in preparation, and renewals of two of the basic open-hearth samples are being prepared. The demand for the original standard irons is such that renewals of three of them have been prepared in large quantity. A manganese ore and three iron ores have been added to the list of standard samples. A red cast brass standard has been prepared and a method of preparing sheet-brass samples has been worked out.

During the year there were completed about 1,757 tests and analyses, such as printing inks, paper, mucilage, pastes, and sealing wax; metals, especially type metal and similar alloys; reagents; paints, oils, and greases; rubber hose, valves, etc., and miscellaneous, such as submarine cable, book cloths, bricks, etc. These were largely contractual tests, but in cases where existing methods of test are inadequate, new methods are being devised. Progress has been made in standardizing such materials and the methods of test, although much remains to be done.

BUREAU OF FISHERIES.

The fortieth fiscal year of the Bureau's existence, which came to a close on June 30, 1910, has been its most successful one as measured by the volume and variety of its activities. The natural development of its older functions and the execution of the newer ones with which it has been recently invested have each operated to bring it into more important relations to the fisheries in both their local and national aspects.

PROPAGATION OF FOOD FISHES.

In fish culture there have been no radical departures from former methods, but as a result of experience and effort it has been possible to secure greater accomplishment with essentially the same appropriations and equipment that were available in the preceding year. Operations have been conducted at 35 hatcheries and 86 field stations located in 32 States, and no part of the country has been omitted from participation in the benefits of the work.

That the public generally, and especially that part of it interested in the commercial and sporting fisheries, is keenly alive to the benefits of stocking virgin waters and restocking depleted ones with the fishes hatched by the Bureau is shown by the 10,635 applications for fish received during the year, an increase of 523 over those received in the preceding twelve months. In addition to the fish planted in response to these requests, by far the larger part of the output, especially of the more important commercial species, was planted by the Bureau on its own initiative in the waters subject to the heaviest fisheries.

Despite the generally unfavorable climatic conditions, resulting in the curtailment of egg collections, the total output of fish and eggs was over 3,230,000,000, the greatest in the history of the service, and nearly 125,000,000, or 4 per cent, in excess of the output of the preceding year. Notwithstanding the magnitude of the work, it can be extended to advantage, and there appears to be a promising field by increasing the facilities for stocking small ponds and streams so as to furnish a local or home fish supply in rural communities which are now deficient in that respect. There is probably no undertaking better adapted to bring the Bureau into closer and more profitable relations with the public at large.

SCIENTIFIC RESEARCHES AND EXPERIMENTS.

To supply data necessary for purposes of legislation in connection with the fisheries, the governor of Virginia at the instance of the state fish and oyster commission early in 1909 preferred a request for a

survey of the public oyster beds of James River. The field work was carried on from July 1 to September 15, the season when the beds are in their optimum condition, and a comprehensive report with elaborate charts showing in detail the extent and character of the beds was issued and placed in the hands of the legislature at its session in January. It is regretted that the highly desirable legislation which the state commission recommended upon the basis of this work and proposed to the legislature failed because it was supposed to be in conflict with certain constitutional provisions.

A similar survey of the public oyster beds of Delaware, in the prosecution of which the State bore a share of the expenses, was undertaken in June, 1910, and was in process at the end of the fiscal year. The survey of the oyster grounds in Maryland, in which the Bureau is cooperating with the Coast and Geodetic Survey and the Maryland Shell-Fish Commission, was continued and the field work was nearly completed at the close of the fiscal year.

The experiments in fattening oysters under artificial conditions at Lynnhaven, Va., produced encouraging results, and in the latter part of the season there were practically no fat oysters produced in that region excepting those coming from the Bureau's experimental plant.

At the request of the state authorities the oyster beds of Alabama and Mississippi received a preliminary examination, and a survey in the interests of oyster culture will be made during the coming year.

Investigations of the pearl-mussel beds of the Mississippi Valley, the material depletion of which threatens the prosperity of the important pearl-button industry, have been prosecuted in ten States with a view to opening new sources of supply for the manufacturers and for the purpose of laying a foundation for the protection, conservation, and improvement of the existing beds. The recently authorized station at Fairport, Iowa, should be of great value in helping to maintain and develop the button industry; and it is gratifying to be able to report that at the end of the fiscal year construction was so far advanced as to permit the beginning of practical experiments on a small scale.

Diseases of fishes under the artificial conditions necessarily attendant upon operations at hatcheries appear to be growing, or at least the Bureau is more frequently called on by state officials and private persons and by its own service for advice and assistance in their diagnosis and treatment. The work is much hampered by the lack in the United States of either public or private facilities for the study of the problems involved, and but little progress is being made. In some cases the epidemics are disastrous and in a short time negative the results of years of work. Not only are the United States, the States, and individuals annually sustaining heavy financial losses through ignorance of the nature of the troubles, but there is a

suspicion that in some cases the diseases may be related to similar disorders in man. There is therefore abundant reason why the Bureau should be provided with special laboratory facilities for the prosecution of these studies, as was urged in a special message of the President to the last session of Congress.

The special examinations of lakes and streams in the interests of the fisheries and fish culture have been continued. Special importance is attached to the determination of the dissolved air in waters and its quantitative relation to the possibility of the existence of fish life.

The investigation of the fishery resources of the Philippine Islands by the steamer *Albatross*, which has been in progress since 1907, has been concluded. The economic and practical data collected are highly valuable and the scientific results important.

The biological laboratories have been open as usual and their operation has facilitated many and varied investigations.

COMMERCIAL FISHERIES.

The commercial fisheries of the United States, which have an annual value to the fishermen of \$62,000,000, are, with few exceptions, in a prosperous condition. One of the most noteworthy of these exceptions is the mackerel fishery, which for a considerable period has been much less productive than formerly, and in the year just closed exhibits a material decrease as compared with the preceding twelve months. The causes for this decrease have long been debated. It is hardly credible that a fish having the habits of the mackerel could be seriously decimated by the operations of the fishery, and the facts at command appear to indicate that the fish still exist in large bodies, but that there has been some change in habit. The matter is of high pecuniary importance to the fishermen, and, as stated in last year's report, the Bureau undertook an investigation in the spring of 1909 at the urgent request of the New England fishery interests. The *Grampus*, which was detailed for the duty, under the direction of an experienced mackerel fisherman, continued her operations until about October, covering the usual haunts of the fish from Cape Hatteras to the south coast of Newfoundland. The cruise was productive of good in furnishing to the fishing fleet information of the immediate whereabouts of mackerel schools and added something to knowledge of the habits of the fish, but did not shed much light on the main question.

The shad fishery of the Atlantic coast is also gradually waning despite extensive work in the propagation of the fish. The inquiry commenced in the last fiscal year was continued. The results of this work, which were directed principally to Chesapeake Bay and its tributaries, show rather conclusively that the cause of the decrease

is the intensity of the fishery and the obstruction which some of the apparatus employed presents to the migration of the fish to the spawning grounds in the headwaters of the streams. In 1909 there were fished in Chesapeake Bay 3,332 pound nets, some of the strings extending in a practically unbroken line 4 or 5 miles from shore, 12,768 gill nets, and a considerable number of other nets. Certain streams are almost cut off to the access of fish, and in some cases the fixed apparatus is so placed as to be an impediment to navigation. The latter phase of the matter is the subject of inquiry by the War Department, which has been furnished with charts and memoranda exhibiting the data collected by the Bureau. The Bureau several years ago was largely instrumental in bringing about the correction of similar conditions in North Carolina, with the result that its collection of shad eggs at the Edenton hatchery increased from about 6,748,000 in 1905 to about 70,000,000 in 1910.

The oyster fishery of the United States, the most valuable fishery of any kind possessed by any nation of the world, was made the subject of comprehensive statistical inquiry during the latter part of the fiscal year, and it is the purpose to continue the work. No complete data of this industry, the product of which has a first value of \$16,000,000 annually, have ever been collected, and most of the matter which is available is involved with the general statistics of the fisheries as a whole. For the information of the trade, but more especially to supply a basis for rational regulation and administration of the oyster grounds of the several States, it is highly important that full data of the fishery should be available. The lack is felt on every occasion when the oyster question comes up for consideration.

ALASKAN FISHERY INTERESTS.

Salmon-inspection service.—As a result of the vigilant enforcement during the preceding year of the laws for protection and regulation of the salmon fisheries, there were comparatively few violations during the fiscal year just ended. The Bureau has given effect to several additional regulations, which have put a stop to certain minor abuses. Efforts to prevent the waste caused by the rejection of edible portions of fish of which the more desirable parts have been utilized have been successful; and an endeavor is now being made to stop the use of food fishes for the manufacture of fertilizer and to encourage the utilization in their stead of scraps and wastes. This will serve the dual purpose of economy and the prevention of water pollution through the discharge of putrescible materials.

The total yield of the salmon industry during the year was valued at \$9,796,000, a decrease of \$887,000 from the preceding year. There were employed 11,440 persons and an invested capital of \$9,007,000.

The cod and halibut fisheries yielded a product valued at \$314,410 and employed 550 persons and \$503,800 fixed capital.

Fur-seal fisheries.—The act of Congress approved April 21, 1910, made fundamental changes in the administration of the Pribilof Islands, and on the expiration of the lease recently in force the Bureau assumed control of all matters relating to the seal herd and the care, control, and general welfare of the native population. One hundred and fifty thousand dollars was appropriated to give effect to the law, and under its provisions necessary additional employees have been appointed and negotiations have been entered into for purchasing the plant of the former lessees on the islands.

At the time when the Bureau took charge the seal herd, owing mainly to the notorious abuses of pelagic sealing, was in a condition which required the utmost care to save it from practical extinction. The Bureau therefore moved cautiously and adopted no policy until it had called a meeting of practically all naturalists and officials who have visited the islands in the last twenty-five years and had received their advice. On the unanimous recommendation of this board, based on an intimate understanding of the habits of the fur seal and a knowledge of the facts of pelagic sealing, it was deemed advisable to authorize the killing of a reasonable number of the excess of immature males. The number to be killed is left to the discretion of the Bureau's agents on the islands, governed by rigid limitations as to age, sex, size, and an ample breeding reserve of the most vigorous and perfect specimens, selected with a view to improving the herd.

Under the provisions of the law, regulations relating to the killing or capture in Alaska of certain fur-bearing animals other than seals have been promulgated.

The data relating to the seal herds during the year 1910 now available justifies the statement that approximately 13,000 sealskins were secured, from the sale of which we may expect to realize the sum of about \$450,000, as against about \$150,000 received under the contract system last year. At the same time measures for the conservation of the seal herds have been strengthened.

Recommendations.—Communication with some of the points in Alaska at which the Bureau of Fisheries has important interests—is so difficult that relief ought to be provided as far as conditions allow. I recommend more especially that wireless stations be established at Dutch Harbor or Unalaska, and also on the Pribilof Islands. This would go far to protect the inhabitants of the islands, who are wards of the Government, and would also aid in protecting the seal herds on the islands. The commanders of the revenue cutters join in this recommendation on the ground that their operations for the protection of the seal herds against pelagic sealing would be distinctly strengthened.

Upon the Aleutian Islands different varieties of fox and other fur-bearing animals have up to this time been abundant. The supply has been much reduced because substantially no protection has been exercised. To all intents and purposes these animals have been subject to general slaughter, and it is claimed that frequently large numbers of them are poisoned by strangers, among them aliens, for the mere purpose of procuring the skins. If these islands, or some of them, were declared to be reservations, and could then be leased under proper conditions, it is believed that these fur-bearing animals could be fairly conserved, giving the natives reasonable means of self-support, and resulting in an industry of some value.

INTERNATIONAL FISHERY RELATIONS.

At the request of the Department of State the Bureau again detailed a representative to act as observer of the operations of the modus vivendi adopted pending the final determination of the rights of American fishermen on the coast of Newfoundland. At the end of the fiscal year the case was under adjudication before the international tribunal at The Hague, two representatives of the Bureau being present as advisers on technical fishery matters to the counsel of the United States. As in the preceding year, assistance was rendered to the International Fisheries Commission in connection with regulations to give effect to the treaty of April 8, 1908, between the United States and Great Britain, providing for joint control by the United States and Canada of the fisheries in waters contiguous to their common boundary line.

LIGHT-HOUSE SERVICE.

In my report for the fiscal year 1909 reasons were presented in advocacy of the reorganization of the Light-House Service with a view to securing therein more direct, simple, and economical methods of administration.

This matter received consideration at the last session of Congress. The act approved June 17, 1910, which became effective July 1, 1910, discontinued the Light-House Board and created in lieu thereof a Bureau of Light-Houses, under a Commissioner of Light-Houses, to be appointed by the President. The act made provision also for appointment by the President of a Deputy Commissioner, a chief constructing engineer, and a superintendent of naval construction in the Bureau of Light-Houses. The act also provides as follows:

That the commissioner of light-houses, subject to the approval of the Secretary of Commerce and Labor, as soon as practicable, shall rearrange the ocean, gulf, and lake coasts and the rivers of the United States, Porto Rico, and the naval station in Cuba into not exceeding nineteen light-house districts, and a light-house inspector shall be assigned in charge of each district. * * * The President may, for a period not exceeding three years from the taking effect of this section, assign army and navy officers to act in lieu of the appointment of civilian light-house inspectors, but such army and navy officers shall not receive any salary or compensation in addition to the salary or compensation they are entitled to as such army or navy officers: *Provided*, That in the districts which include the Mississippi River and its tributaries the President may designate army engineers to perform the duties of and act as inspectors. The President may detail officers of the Engineer Corps of the United States Army for consultation or to superintend the construction or repair of any aid to navigation authorized by Congress.

In pursuance of the provisions of this law a Commissioner and a Deputy Commissioner were appointed to take office on July 1, 1910. Congress made no appropriation during its last session for salaries of the civilian light-house inspectors authorized in the act, and therefore no steps have been taken toward the appointment of such inspectors.

During the fiscal year ended June 30, 1910, the Light-House Service, which is charged with the maintenance of, and has jurisdiction over, all aids to navigation, established 49 lights above the order of post-lantern lights, 16 fog-signals, 7 submarine signals, 78 daymarks, 751 buoys, and 215 post-lantern lights, and completed the erection of about 18 oil houses. The appropriation for light-keepers' dwellings was applied during the year to the construction of dwellings at 13 stations.

The incandescent oil-vapor system, which produces a light much superior in intensity to the ordinary oil light, and is a strong rival of electricity and acetylene gas, was installed at 45 stations during the fiscal year. Experiments were made toward adding to the reliability of this light, and diminishing the expense of oil consumption, while retaining the efficiency of the lamp within satisfactory limits. Further installation of this system will be made as rapidly as practicable at stations where it is considered practical and desirable. Experimental tests are now in progress for the purpose of improving the fog-signal apparatus now in service, which it is believed will develop valuable results in the near future.

The progress and improvements made in buoyage during the past year were in the further extension of the use of gas buoys of both the Pintsch and acetylene systems, and equipping such buoys with either whistles or bells (aerial or submarine) for particular stations where such combinations are required. Further improvements in the buoys will be in the increased intensity of lighted buoys and their combinations with sound signals, aerial or submarine.

Investigation of acetylene gas as an illuminant in connection with the special apparatus designed and used in connection therewith justifies the statement that it is especially well adapted for light-house purposes.

Experiments have been in progress during the year with a view to improving the incandescent mantle now in use on Pintsch gas buoys, and it is hoped that further valuable results may be obtained in the near future.

A system of buoyage for Ambrose Channel, New York Harbor, which is approaching completion, has been adopted which will, it is believed, meet the requirements of this important deep-water approach to New York. It consists of the establishment of 24 buoys, 4 of which are combination gas and whistling buoys, 4 combination gas and bell buoys, and 16 gas-lighted buoys. This ample provision for the safety of navigation through the channel is made complete by the establishment of what is probably the best light-ship in the world, the Ambrose Channel Light-Vessel No. 87, off the entrance to New York Lower Bay, about $2\frac{1}{4}$ miles from the gas and whistling buoy which marks the intersection of the axes of Ambrose Channel and Gedney Channel. The present illuminant of this vessel is an electric arc light, which was substituted for the incandescent light in previous use; her fog-signals are a 12-inch steam whistle and a submarine bell.

By the act approved June 25, 1910, Congress authorized the employment of not to exceed 1,750 light-house and fog-signal keepers and laborers attending other lights for the fiscal year 1911, an increase of 50 over the preceding year. It is considered that the number thus authorized will be sufficient to meet existing demands.

Subsequent to the close of the fiscal year covered by this report, the following action has been taken in carrying out the intent of the act approved June 17, 1910:

The light-house districts have been rearranged and their number increased from 16 to 19, and an inspector assigned to the charge of each district. One of these new districts comprises Alaska. The growing importance of this territory warrants an increase in the aids to navigation, and a number are now being installed. The other two new districts are Porto Rico and Hawaii. Officers of the Engineer Corps of the Army have been assigned as inspectors in the districts which embrace the Mississippi River and its tributaries; officers of the Navy have been continued as inspectors and have been given general charge in the other districts.

Officers of the Engineer Corps of the Army have been continued on duty with the Bureau of Light-Houses in these districts also, as provided in the act, but have been relieved of the charge of routine repair and construction work. In each district the office forces and light-house tenders have been combined under a single head.

The reorganization under the act of June 17, 1910, promises to result in a considerable economy, and to this end plans have been made for a consolidation under one officer in each district of the office forces, light-house tenders, and the entire routine management of the affairs of the district.

The estimates will be submitted in a form which will permit of the purchase of all supplies for the Light-House Service under a single item of the appropriation, which should result in economy in office work and in the use of the appropriations.

COAST AND GEODETIC SURVEY.

FIELD WORK.

Good progress has been made in the collection and preparation for publication, in the form of Charts, Coast Pilots, Tide Tables, and Notices to Mariners, of all obtainable information useful to navigators and relating to the coast of the United States and to the coasts under the jurisdiction of the United States.

The demand for surveys in Alaska continues, and all of the vessels and men available for the purpose have been employed in charting unsurveyed waters in that Territory. Surveys were made in Portland Canal, Tongass Narrows, Cordova Bay, Controller Bay, Prince William Sound, Cook Inlet, Nushagak Bay (in Bristol Bay), and in the vicinity of Kodiak.

In the Philippine Islands the charting of the unsurveyed portions of the coast is making rapid progress and 10 per cent of the entire general coast line was covered during the year. The work is being done in cooperation with the insular government, as in the past. Surveys were made on the west coast of Samar, north and south coasts of Leyte, north and south coasts of Mindanao, south coast of Masbate, west and east coasts of Mindoro, in Surigao and Tanon straits, and around the Tablas Islands.

Several detached surveys were connected by covering the intervening spaces, and the survey of nearly one-half of the general coast line of the archipelago was completed before the close of the fiscal year.

The improvement of the long wire drag was continued and a drag more than 8,000 feet long was used in open water. This greatly increased the area possible to be examined in any given time and consequently decreases the cost of the work without any loss of accuracy in making the examination of channels and harbors.

Details in regard to the work assigned to the Bureau and to the Superintendent of the Coast and Geodetic Survey as Commissioner representing the United States in recovering and marking the international boundary between the United States and Canada and in the demarcation of the Alaska boundary are given below.

Reference monuments were established along the United States and Canada water boundary west of Point Roberts to the Pacific Ocean. These monuments were placed in the United States and were connected by triangulation with each other and with the triangulation of the Coast and Geodetic Survey. The survey and re-marking of

this boundary was also extended eastward from the summit of the Rocky Mountains, westward from the west end of Lake Superior along Pigeon River, and along the St. Croix and St. John rivers, on the borders of the State of Maine.

In the survey and demarcation of the Alaska boundary in southeast Alaska progress was made at the head of Portland Canal and at the crossing of the Unuk and Salmon rivers. The survey and demarcation of this boundary along the one hundred and forty-first meridian was completed south of the Yukon River to the Natashat Mountains, a distance of 200 miles, and considerable progress was made in extending the work north of the river.

In 1908 and 1909 the Superintendent called attention to the importance of extending a triangulation from the initial point of this boundary on the Yukon River down the great valley to its mouth, but no appropriation has been made for this purpose. I approve this recommendation and have made provision for the work in the estimates which have been submitted to Congress.

Work at the latitude observatories at Gaithersburg, Md., and at Ukiah, Cal., maintained by the International Geodetic Association under the direction of the Superintendent, was continued during the year.

An officer continued on duty as a member of the Mississippi River Commission and another was continuously employed in cooperating with the Maryland State Board of Shell-Fish Commissioners as authorized by law.

The water boundary between the States of Louisiana and Mississippi in Lake Borgne and Mississippi Sound as established by a decree of the United States Supreme Court was indicated by placing buoys in position and referring them to the marks previously established on shore.

Observations to determine the relative force of gravity were made in 14 States and Territories and in the District of Columbia.

The standard levels were extended in 4 States and Territories and topographic surveys were made in 7.

Triangulation was done in 13 States and Territories and supplementary triangulation, including the determination of the geographic positions of aids to navigation, was continued along the coasts of Massachusetts, Connecticut, Maryland, Virginia, North Carolina, and the west coast of Florida. This work was completed on the west coast of Florida.

An examination of navigable waters on the coasts of Maine and New York and of Mayaguez Harbor, in Porto Rico, was made with a long wire drag, and other hydrographic work was done in the waters of 11 States.

The magnetic survey of the country was continued by making observations at 238 stations distributed over 39 States and Territories and numerous observations were made at sea on board the surveying vessels on their cruises to and from their fields of work in various portions of the country. These observations were made in the Atlantic and Pacific oceans and in the waters of the Philippine Archipelago. A continuous record was also obtained of the variations in the force of terrestrial magnetism at five observatories equipped with self-registering instruments.

A continuous record of the tidal changes was obtained at 8 stations on the Atlantic coast and at 4 stations on the Pacific coast, including 1 station in Alaska. Self-registering gauges were also maintained at 2 stations in the Philippine Islands. The record of some tide observations of more than ordinary interest were received during the year. These observations were made in the Arctic Ocean by Civil Engineer R. E. Peary, U. S. Navy, and a discussion of them in connection with all the other available data in that region has been made and is ready for publication.

Special surveys were made of the Delaware Breakwater Speed Trial Course and of selected localities in the Hawaiian Islands at the request of the Navy Department, and work was done at the request of the governor of North Carolina to aid in enforcing the fishery laws of that State.

The attendance of two officers of the Survey at the Sixteenth General Conference of the International Geodetic Association, held at London and Cambridge, England, September 21 to 30, as the delegates of the United States, was noticed in my last annual report.

OFFICE WORK.

Progress was made in the various branches of the office work, including computation, plotting, and discussion of the results of the work in the field and the preparation of data for publication by chart or otherwise.

A discussion of the Figure of the Earth and Isostasy from Measurements made in the United States prior to 1906 was published and was received with favorable comments by the foreign geodesists assembled at the Sixteenth General Conference of the International Geodetic Association in September, 1909. A supplementary discussion of this same subject, utilizing additional data to 1909, was also published.

Tables of predicted tides for numerous ports on the coasts of the United States and in foreign countries for the year 1911 were prepared and published.

Three volumes containing the results of observations at the magnetic observatories in past years were also published, and the annual report for 1909 was prepared for transmission to Congress.

On account of the territorial expansion of the United States and the consequent extension of the sphere of the Survey's operations, there have been urgent and continually increasing demands on this Bureau for surveys and new charts. Each year adds to the number of charts published, and all of these exact time and energy to keep them up to date. The Navy Department has urgently requested that the charts of this Bureau be constructed on the mercator projection. In view of these conditions the Superintendent has appointed a board to fully consider the whole subject of chart construction and publication.

The first charting of the Atlantic, Gulf, and Pacific coasts of the United States having been practically completed, and considerable progress having been made on the work in our distant territories, it is possible to consider the subject in its broadest aspect. The later charts of the Survey are examples of the best modern usage in chart construction, and they will only need in some cases a rearrangement of limits and the further simplification of some details to perfect them from an economical standpoint. With respect to the charts of earlier date, the changes will have to be more radical. On these charts a great amount of detail was represented, which under modern conditions is not considered necessary, and its rendering was also much more minute and elaborate than accords with present practice. Their correction involves an adherence to the same time-consuming method of representation. For twenty years all new charts have been oriented with the meridian, but there still remain a number of the earlier charts which were oriented diagonally with a view to include greater sea area. But for this feature they are as useful and accurate as any others.

Formerly on many charts a double unit for depths was employed, fathoms for deep water and feet on dotted surfaces for the shoal areas. During the last decade the practice has been to employ a single depth unit for a chart, either feet or fathoms, depending on which unit will best suit the area represented. The difference between the mercator and polyconic projections is imperceptible on the large-scale charts, but there are small-scale charts where it is apparent.

The board submitted a report fully covering all these points with recommendations, which the Superintendent has approved, wherein a definite programme is outlined for eliminating the old-style charts and for replacing them with a smaller number on the mercator projection, simpler in character, on which the latest information can be more readily shown.

The demand for charts was greater than in any previous year, except the preceding fiscal year, when the issue was abnormally large.

A notable event of the year was the completion of a tide-predicting machine in the instrument shop of the Survey, which embraces many new features and utilizes the increase in the knowledge of the constituents of tidal fluctuations since the machine previously used was completed, in 1883. The construction of this machine has been incidental to the regular repair work of the Survey, and consequently it has been many years in progress. It was completed in February and has been tested in predicting the most complicated known tides, and the quantities obtained have been compared with the results of computation and found to be satisfactory from every point of view.

The amount appropriated for the Coast and Geodetic Survey for the fiscal year ended June 30, 1910, and accounted for by the bureau disbursing agent was \$997,290 (exclusive of the allotment for printing), of which \$245,000 was for manning and equipping the vessels of the Survey, \$40,000 for repairs and maintenance of vessels, and \$50,000 for office expenses. The remainder of the appropriation was divided between the expenses of parties in the field, \$326,400, and salaries of field and office forces, \$335,890. In addition to the above sums, the appropriations to the State Department for marking the United States and Canada boundary (except a portion of the water boundary) and for locating and marking the Alaska boundary are disbursed under the direction of the Superintendent as Commissioner through the bureau disbursing agent, as special disbursing agent of the Department of State.

A detailed description of the work of the year with maps illustrating progress can be found in the Annual Report of the Superintendent of the Coast and Geodetic Survey, which is required by law to be submitted to Congress in December of each year.

BUREAU OF NAVIGATION.

The importance of beginning preparations for the opening of the Panama Canal is again impressed upon American shipowners and shipbuilders. The trade through the canal between the Atlantic and Pacific coasts of the United States will be restricted to American vessels. Unless the vessels are available to accommodate this trade at reasonable rates, a demand may arise for the repeal or amendment of the coasting law, which has very largely contributed to the ship-building industry of the United States. That law has already been the object of attack partly by alien interests, which have absorbed the transportation of our exports and imports and are eager to enter into the reserved sphere of our domestic transportation. The question of Panama Canal tolls is now under consideration, and in view of the fact that the entire cost of the canal is assumed by the people of the United States every consideration consistent with our treaty obligations should be shown to American ships.

Five navigation measures were recommended to Congress in this report last year, of which four were enacted into law. The act of June 24, 1910, requires all ocean passenger steamers carrying 50 or more persons on routes of 200 miles or more to be equipped with efficient wireless apparatus and operators after July 1, 1911. I deem this an important measure in the interest of safety to life at sea. The act also requires the different wireless systems to interchange messages with one another, and thus carries out in part the Berlin Wireless Convention of 1906, generally ratified by other maritime nations, but not yet approved by the Senate of the United States. Regulations for the enforcement of the act will be prepared in due time and a very small appropriation will suffice. A bill for the general regulation of wireless telegraphy, which all departments concerned favored, passed the Senate and awaits the action of the House.

A reasonable law for the regulation of motor boats was signed on June 9, 1910. That act has been generally commended by those concerned, and minor embarrassments in its enforcement have been overcome. The loss of life on the myriads of these boats was much less last summer than during previous seasons, and while this result is doubtless due to better construction and more exact knowledge of builders and owners the law, I believe, has contributed to the result. The general deficiency appropriation act of June 25, 1910, carried an appropriation of \$15,000 to enable collectors of customs to enforce on the water the navigation and inspection laws administered by this

Department. In consequence these laws, which look to safety of life on federal waters, have been more generally and carefully enforced than ever before. The appropriation is an economy for reasons set forth in last year's report, and it has been included in the estimates of this Department.

The act of June 23, 1910, provides at last a uniform federal law relating to liens on vessels for repairs, supplies, and other necessities, and effects a reform which the Bar Association, the Maritime Law Association, and shipping interests generally, with the approval of the federal judiciary, have favored for many years.

The Brussels International Conference on Maritime Law in September agreed on two draft conventions, covering damages in case of collision and concerning maritime assistance and salvage, which will doubtless be submitted to the Senate of the United States.

The recommendation for an extension of the ocean-mail act of 1891 has not yet been acted upon, and is most earnestly renewed. The necessity for it appears to be second only to that for an adequate navy, and the reasons for each are in many respects similar. For a period of over thirty years every President has favored legislation to promote the merchant marine, and our lack of ocean steamships must be regarded as an element of national weakness.

The output of our shipyards for the past fiscal year met the moderate anticipations expressed in this report a year ago. Recovery from the depression of 1909 was gradual, and during the current year thus far steady progress has been shown, so that barring adverse conditions now unforeseen this year's output should equal the normal annual average construction, except on the Great Lakes, where the output will be less than usual. During the fiscal year merchant vessels built and documented numbered 1,361, of 342,068 gross tons. As usual, more than half the construction was on the Great Lakes.

On June 30, 1910, the total documented merchant shipping of the United States comprised 25,740 vessels of 7,508,082 gross tons, of which nearly 2,900,000 tons are employed on the Great Lakes. Our tonnage registered for foreign trade amounts to only 791,825 gross tons, and of this scant amount much is antiquated and out of commission. Last year American vessels carried only 8.7 per cent of our exports and imports.

Tonnage duties during the fiscal year amounted to \$1,081,526.70, an increase of \$29,152.33 over the previous year, and the largest amount collected from this source since 1884. The tariff act of August 5, 1909, reduced from 3 cents to 2 cents the rate per ton on vessels entering from near-by foreign ports. By the act of March 8, 1910, vessels trading on the Great Lakes with the Province of Ontario, which to an extent compete with railroads, were exempted

from these taxes, an exemption granted reciprocally to American vessels by that Province. The policy of the United States in the matter of federal charges on shipping, domestic and foreign, for many years has been progressively liberal.

Shipping commissioners at 17 seaports have shipped, reshipped, and discharged 356,448 seamen on American vessels during the past year, an increase of 14,468 men over the previous year. In ten years the number of men shipped, reshipped, and discharged has increased from 160,377 to 356,448, and the cost to the Government from \$59,379.84 to \$65,539.19—reasonable evidence of economy in administration. Section 7 of the sundry civil appropriation act of June 25, 1910, does away with the permanent annual appropriation for this service and detailed estimates, accordingly, are submitted. The change probably will not lead to any greater economy in administration, but hereafter shipping commissioners' offices can be established only when Congress has specifically appropriated for them.

By the act of December 21, 1898, the penalty of imprisonment for desertion of seamen from American vessels in domestic ports and in near-by ports was abolished. That act covered more than nine-tenths of the seamen on American vessels, and was twelve years in advance of the resolution of the International Seamen's Congress at Copenhagen last August, favoring the abolition of imprisonment for desertion wherever prescribed by the laws of maritime nations. In this respect, as in most other respects, American laws are more favorable to labor at sea than the laws of other nations. The law permitting imprisonment for desertion from American ships in remote foreign ports, which still remains, is practically a dead letter, and its repeal is recommended.

The subjects mentioned and others are considered in detail in the report of the Commissioner of Navigation.

STEAMBOAT-INSPECTION SERVICE.

During the fiscal year ended June 30, 1910, there were transported on vessels which, by law, are required to report the number carried, 328,666,255 passengers. The total number of accidents resulting in the loss of life during this period was 55, a decrease from the previous year of 19, and the number of lives lost 379, including passengers and crew, an increase of 101 over the previous year. Of the total number of lives lost 160 were from causes not incident to perils of navigation, leaving 219 lives lost that can be fairly chargeable to accidents, collisions, or foundering. The total number of 379 lives lost, when compared with the 300 odd millions of passengers that were carried, makes a ratio of 1 life lost, including passengers and crew, for every 867,193 passengers carried.

The number of vessels inspected and certificated in the fiscal year 1910 was 8,429, an increase of 48 in number, with an increased tonnage of 746,084 as compared with the previous fiscal year. Of the vessels certificated 7,114 were domestic steamers with a tonnage of 4,879,236, a decrease of 38 steamers and an increase of 469,495 tons; and 464 were foreign passenger steamers with a tonnage of 3,129,872, an increase of 45 in number and of 238,969 tons. Sail vessels and barges to the number of 38 were inspected, with a tonnage of 21,140, an increase of 2 in number and 3,013 tons over the previous year, and also 480 seagoing barges of 427,932 gross tons, an increase of 32 in number and 16,192 tons over the previous year.

Motor vessels with a tonnage of 16,526 were inspected and certificated to the number of 333, an increase of 7 in number over the previous year and a decrease of 1,585 tons.

Licenses were issued during the year to 13,156 officers of all grades, while of 1,016 applicants who were examined for color-blindness 18 were rejected and 1,000 were passed. As compared with the previous fiscal year these figures show a decrease of 344 in the number of applicants examined and 326 in the number of applicants passed.

At the various mills 4,526 steel plates for the construction of marine boilers were inspected, an increase over the previous year of 1,467, and of this number 329 were rejected. In addition to these plates there were inspected at the mills a large number of steel bars for braces and stay bolts in marine boilers, and also several hundred plates for stock and repair purposes. Many requests were received from other branches and departments of the Government for tests of boiler material at the mills. These received the attention of the Service, and prompt reports were rendered to the proper officials.

During the year there were examined and tested at various manufacturing factories 156,837 life-preservers, of which 1,063 were rejected.

The total expenses of the Service were \$528,119.02, an increase over the previous fiscal year of \$1,295.23. Its personnel at the close of the fiscal year consisted of 259 officers and clerks and 1 messenger, while 2 vacancies existed in the clerical grades of the service at large.

COUNTING OF PASSENGERS.

For many years the responsibility for the counting of passengers on excursion steamers has been divided by reason of the small number of inspectors in the Service, and most of the counting of passengers has been done by customs officers under the authority of section 4496, Revised Statutes. Every season, however, the old question arises as to who shall count passengers, and the same answer is given, that the inspectors of this Service will count them as far as they are able and the balance of the counting must be done by the customs officers. It is apparent that with this divided responsibility it is possible for many steamers upon which passengers ought to be counted to escape observation. It is believed, therefore, that the counting of passengers should be brought entirely under the Service, and that there should be appointed a sufficient number of additional inspectors, employed during the season of navigation, to count passengers, particularly on excursion steamers. If this is done, the Service will be able to control the action of such inspectors and to make sure that passengers of every steamer are counted. As the demand for supervision of motor boats grows, an increase in the inspectors' force will in any event become necessary.

HULL INSPECTION.

For some time it has been required that the manufacturers of boilers submit to the local inspectors blue prints showing in detail the proposed construction of the boiler or boilers which they are about to build. Inspectors have thereby been enabled to ascertain whether the boilers are to be constructed in conformity with the requirements of the General Rules and Regulations and of the United States statutes upon which these rules and regulations are based. Before approving the blue prints the inspectors confer with the boiler manufacturers, pointing out to them the details with respect to that part of the construction which does not comply with the General Rules and Regulations.

It is believed that the time has come when blue prints of hull construction should also be submitted, not with a view to imposing unnecessary burdens upon shipbuilders and the owners of steam vessels but in order that the inspectors may know whether the hulls

of the vessels proposed to be built are constructed in accordance with safe practice. At present the inspectors of hulls ascertain exactly whether the necessary life-saving and fire-fighting equipment is aboard the boat, whether the fire hose is in good condition, whether the necessary life preservers are on board and in good condition, and other matters relating to the hull in inspection of a vessel, but having ascertained all of this they are often in ignorance as to the details of the original construction of the hull. An important item of information with which inspectors should be furnished when the hull of a steamer is built is the thickness of the material and the size and weights of the scantling used in the construction thereof. It is well known that there is a general deterioration of hulls, with the result that as the years go by and the vessels go from one district to another the inspectors really have to depend absolutely upon surface indications as to the condition of the hull. The condition of a steel or iron hull is ascertained by the hammer test and general indications, and of wooden hulls by boring, scraping, etc. Those familiar with hull construction know that quantities of rust accumulate on the inside of the iron or steel hull if not properly cared for, with the result that each year the material of the hull becomes thinner, or the wooden hull softens and rots. If inspectors were furnished with detailed information regarding the original construction of a hull, they would then be accurately informed as to just how much the vessel may have deteriorated since her construction. It is therefore proposed to recommend a bill which will make necessary a more detailed hull inspection than that which now prevails.

UNIFORM ADMINISTRATION OF LAW.

During the fiscal year last ended the Supervising Inspector-General has made extraordinary efforts to obtain that uniform administration of the law with which he is charged. While it is true that different conditions prevail upon the coasts from those which exist on the lakes and on the western rivers, it is also true that there are certain conditions that prevail generally. The Supervising Inspector-General has therefore endeavored to make uniform the administration of the statutes governing the operation of the Service, as well as the rules and regulations based upon those statutes. To this end there has been inaugurated the custom of furnishing at the end of each month a bulletin showing the rulings of the Bureau, and these bulletins are sent to all of the inspectors of the Service, to customs officers with whom this Service has business, and to most of the steamboat companies and marine-boiler manufacturers in the United States. This has been much appreciated by the marine interests of the country, as

testified by numerous letters received. It is believed that this practice will promote that uniform administration of law which is so desirable, and indeed necessary.

CONCLUSION.

More detailed information will be found in the reports of the Chiefs of Bureaus.

Respectfully,

CHARLES NAGEL,
Secretary.

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