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CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES[1]

March 22–April 18, 1936

Influenza.—The death rate from all causes for the week ending January 11, 1936, in a group of 86 large cities[2] was 14.2 per 1,000 (annual basis), which was slightly above the rate of 14.0 for the corresponding week of 1935. In this week of 1935, there were more than 10,000 reported cases of influenza, but in the 1936 week there were 2,561 cases, which may be compared with 2,804 for the corresponding week of 1934—a year that was exceptionally free from influenza. After the small peak of January 11, 1936, the death rate in this group of cities dropped to 12.5 and 13.2 for the weeks ended January 25 and February 1, respectively. Following these weeks there was a steady rise to a peak of 14.8 for the week ended February 29, as compared with an average level of approximately 12.7 for the corresponding seasons of 1935 and 1934, with 1933 rates at a still lower level. During the 4 weeks of March 1936, following the 14.8 peak rate, there was only 1 week with a rate below 14.0, which may be compared with an average level of about 12.4 for the corresponding weeks of 1935 and 1934. The first week of April showed considerable decline; but the rate (13.0) was still above the 1935 and 1934 levels, and it remained so until April 25, the last week with available data (see table 1).

It is seen that the January peak of 1936 was not accompanied by an excessive number of reported influenza cases. However, the reported number of cases rose from 3,025 for the week ended February 1 to a peak of 11,870 cases for the week ended February 22, which was 1 week earlier than the death peak. This rise in 1936 may be compared with a rise from 2,714 to only 3,683 cases in the corresponding weeks of 1934. In each of the 5 weeks following the peak of February 22, 1936, more than 10,000 cases were reported, but by April 25, the last week with available data, the weekly number of cases had dropped to approximately 4,100.

[1] From the Office of Statistical Investigations, U. S. Public Health Service. These summaries include only the 8 important communicable diseases for which the Public Health Service receives weekly telegraphic reports from the State health officers. The numbers of States included for the various diseases are as follows: Typhoid fever, 48; poliomeylitis, 48; meningococcus meningitis, 48; smallpox, 48; measles, 47; diphtheria, 48; scarlet fever, 48; influenza, 44 States and New York City. The District of Columbia is counted as a State in these reports.

[2] Data from the Weekly Health Index of the U. S. Bureau of the Census.

If the death rates be expressed in terms per 100,000 population and the years 1935 and 1934 be used as approximate norms, it is found that, for the peak week ended February 29, the excess rate was about 210 per 100,000 (annual basis), and that for a period of 6 or 7 weeks the excess rate was approximately 150 to 200 per 100,000. While these excess rates refer to all causes of death, it has been shown [3] that such excess rates serve to delimit and measure the extent of an influenza epidemic about as well as excess rates from influenza and pneumonia.

Weekly death rates from all causes in 86 large cities and weekly number of reported cases of influenza in 44 States and New York City

DEATH RATES [1] FROM ALL CAUSES PER 1,000 POPULATION (ANNUAL BASIS) IN 86 LARGE CITIES

	Week ended—												
	Feb. 1	Feb. 8	Feb. 15	Feb. 22	Feb. 29	Mar. 7	Mar. 14	Mar. 21	Mar. 28	Apr. 4	Apr. 11	Apr. 18	Apr. 25
YEAR													
1936	13.2	13.4	13.9	14.0	14.8	14.2	14.1	13.8	14.2	13.0	12.9	13.2	13.0
1935	12.7	13.1	12.6	12.1	13.2	12.8	12.2	12.6	12.0	12.0	11.8	12.3	12.6
1934	12.3	12.2	13.6	12.8	12.8	13.2	12.6	12.5	12.3	12.6	12.4	12.2	12.0
1933	12.1	11.8	12.4	12.3	11.5	11.9	12.1	11.7	11.3	11.6	11.1	11.0	11.3

INFLUENZA CASES REPORTED IN 44 STATES AND NEW YORK CITY

REGION AND YEAR													
All States: [2]													
1936	3,025	4,577	9,077	11,870	11,515	11,746	10,163	10,118	10,262	8,263	7,128	6,138	4,163
1935	10,252	9,530	8,591	7,018	5,727	7,030	3,744	2,955	2,054	2,073	1,662	1,133	950
1934	2,714	2,819	3,825	3,683	3,341	2,971	2,754	2,193	2,090	2,176	1,712	1,161	1,292
1933	10,880	7,304	5,731	4,637	3,643	3,163	2,336	2,190	1,861	1,435	1,317	1,002	1,127
New England and Middle Atlantic:													
1936	31	78	118	108	163	229	200	168	86	80	48	86	107
1935	144	83	73	63	95	250	61	36	104	48	22	38	31
1934	62	71	53	48	90	50	58	45	34	42	33	30	33
1933	1,669	505	257	233	192	91	68	73	80	170	47	40	32
East North Central:													
1936	226	174	231	230	291	279	269	191	424	278	189	395	224
1935	1,195	416	586	335	573	280	321	146	252	127	250	95	219
1934	301	236	329	346	284	193	298	168	248	146	154	74	151
1933	1,018	665	568	685	345	512	481	208	379	144	263	144	263
West North Central:													
1936	217	266	362	440	704	697	1,032	1,178	1,530	1,069	835	591	526
1935	626	765	898	531	533	296	235	155	173	70	181	131	88
1934	73	97	336	261	226	230	207	276	99	109	114	67	121
1933	1,045	114	269	74	85	54	36	30	11	50	22	7	28
South Atlantic:													
1936	1,197	1,729	2,551	2,866	4,135	3,162	2,592	2,081	1,615	1,339	794	685	596
1935	2,783	2,393	2,096	1,489	1,353	1,229	933	487	524	394	366	215	206
1934	1,211	943	1,232	1,271	1,016	1,027	905	714	873	620	489	465	464
1933	4,042	3,586	3,104	2,522	1,821	1,597	1,044	1,181	617	510	503	319	304
East and West South Central:													
1936	1,036	1,584	1,675	2,774	3,930	4,754	4,450	4,830	4,335	4,775	4,238	3,538	2,428
1935	3,150	4,400	3,998	3,707	2,472	4,331	1,671	1,898	818	1,031	660	514	298
1934	935	1,317	1,711	1,567	1,531	1,316	1,118	842	718	742	565	319	381
1933	1,954	1,766	1,122	768	907	656	560	563	635	428	333	398	466
Mountain and Pacific:													
1936	318	746	4,140	5,458	2,292	2,625	1,620	1,670	2,272	722	1,024	843	282
1935	2,354	1,473	940	893	701	644	523	233	183	413	193	148	108
1934	132	155	164	193	194	155	168	148	118	517	357	206	142
1933	1,152	668	411	355	293	253	147	135	139	133	149	89	100

[1] Data from the Weekly Health Index, issued by the Bureau of the Census.
[2] Mississippi, Nevada, New York, Pennsylvania, Virginia excluded, data not available. The District of Columbia is counted as a State.

[3] Collins, Selwyn D.: Excess mortality from causes other than influenza and pneumonia during influenza epidemics. Public Health Reports, Nov. 11, 1932. (Reprint No. 1553.)

Considering both the mortality and the reported cases, it appears that, during February and March of 1936, (*a*) a minor influenza epidemic was in progress, and (*b*) the excess mortality was of the order of magnitude of that of the epidemic of December–January of 1932–33 and greater than in the epidemics of March 1932 and January 1935, which have been described in some detail in the Public Health Reports.[4] All of these epidemics, however, were distinctly less than that of 1928–29. The minor epidemic of February–March 1936 has apparently occurred almost without notice by the press or current medical literature.

Meningococcus meningitis.—For the country as a whole the incidence of meningococcus meningitis (1,169 cases) for the 4 weeks ended April 18 stood at about the level of the preceding 4-week period (1,172 cases). The total number of reported cases for the current period was about 1.8 times that for the corresponding period in 1935 and was the highest for this period since 1929, when there were 1,289 cases. In each geographic region, except the West North Central, the incidence was higher than it was at this time last year. States from which a large number of cases were reported were Kentucky, 146; Ohio, 92; Maryland, 71; and Texas, 55. In Virginia, where the disease has been unusually prevalent, the number of cases dropped from 116 for the preceding 4-week period to 44 for the current period. While the number of weekly cases is fluctuating considerably in the various geographic regions, and some States are still reporting increases, the general tendency appeared to be toward a decline.

Measles.—The number of cases of measles continued to increase. For the 4 weeks ended April 18 approximately 50,000 were reported. Compared with preceding years the number was less than 40 percent of that reported for the corresponding period in each of the years 1935 and 1934, when measles was unusually prevalent, and only about 70 percent of the average for the years 1929 to 1933, inclusive. The disease continued unusually prevalent in the Mountain and Pacific regions, where the number of cases (14,003) was 1.2 times that for last year and was the highest for this period since 1930. The North Central regions seemed mostly responsible for the decrease from the more normal years, as the incidence in those areas was the lowest in the 8 years for which data are available. The East North Central group of States reported 2,328 cases, as compared with an average of approximately 19,000 for nonepidemic measles years, and the West North Central group approximately 2,000, as compared with an average of about 5,500. In other regions the incidence was about normal for this season of the year.

[4] Collins, Selwyn D., and Gover, Mary: Influenza and pneumonia mortality in a group of about 95 cities in the United States during four minor epidemics, 1930-35, with a summary for 1920-35. Public Health Reports, Nov. 29, 1935. (Reprint No. 1720.)

Smallpox.—The number of cases of smallpox reported for the 4 weeks ended April 18 was 878, as compared with 739, 656, and 815 for the corresponding period in the years 1935, 1934, and 1933, respectively. The high incidence was still confined to the West North Central, Mountain, and Pacific regions. While the incidence had declined considerably from that of the preceding 4-week period, each State in the West North Central region reported an increase over last year's figures for this period. For the current period Kansas reported 134 cases; Iowa, 129; South Dakota, 114; and Nebraska, 104. For the region as a whole the number of cases (584) was more than twice that for the corresponding period last year. Montana, with 41 cases, and Oregon, with 30 cases, kept the incidence in the Mountain and Pacific regions above that of recent years; but in other States in those regions where the disease has been unusually prevalent the incidence had dropped to a more normal level.

Scarlet fever.—The expected seasonal increase of scarlet fever was in progress; the number of cases reported for the current 4 weeks was 31,547, as compared with 35,311 for the preceding 4-week period. In relation to recent years the current incidence closely approximated that for the corresponding period in 1935; was about 25 percent above the figure for 1934, and more than 20 percent above the incidence in 1933. In the West North Central region (5,828 cases) and Mountain and Pacific regions (3,830 cases) the current incidence was the highest for this period in the 8 years for which data are available; in the South Central regions (1,035 cases) it was the highest in 5 years. The number of cases (965) reported from the South Atlantic region was the lowest in 7 years, and in the East North Central region the number was the lowest in 4 years. In the New England and Middle Atlantic regions the incidence (10,190 cases) was close to the average for recent years.

Typhoid fever.—The current incidence of typhoid fever was about on a level with that of recent years. For the 4 weeks ended April 18 there were 620 cases reported. Owing to the continued high incidence in Ohio (148 cases for the 4 weeks), the number of cases in the East North Central region was about 2.5 times that for the corresponding period in 1935. In the Mountain and Pacific regions the incidence closely approximated that of last year, while in other regions the number of cases fell considerably below that of last year. Of the 148 cases in Ohio, Mansfield reported 84.

Diphtheria.—The total number of reported cases of diphtheria for the current 4-week period was 1,808, as compared with 2,193 for the corresponding period in 1935 and about 2,500 in each of the 2 preceding years. The incidence was the lowest for this period in recent years in all sections of the country.

Poliomyelitis.—The number of cases (47) of poliomyelitis reported for the 4 weeks ended April 18 was the lowest for this period in the

8 years for which data are available. In 1935, 1934, and 1933 the numbers of cases for this period were 77, 91, and 54, respectively. In the South Atlantic region the current incidence stood at about the level of last year, but in all other regions it was somewhat below the seasonal expectancy.

Mortality, all causes.—The average mortality rate from all causes, in large cities, as reported by the Bureau of the Census, was 13.3 per 1,000 inhabitants (annual basis). For the corresponding period in the years 1935, 1934, and 1933 the rate was 12.0, 12.4, and 11.3, respectively.

A COMPARATIVE STUDY OF CERTAIN CHARACTERISTICS OF 1,000 INMATES OF THE NORTHEASTERN PENITENTIARY [1]

I. AGE

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The present comparative study of certain characteristics of 1,000 inmates, admitted to the Northeastern Penitentiary, Lewisburg, Pa., during the period December 12, 1932, to December 21, 1933, was undertaken to determine the traits which differentiate delinquents from nondelinquents. It is probable that the etiology of crime will be found in the realm of these differential traits.

TABLE 1.—*Statistical constants of age distribution of delinquents committed to State and Federal institutions compared with that of general male population* [1]

STATE INSTITUTIONS

Statistical constants	1926	1927	1929	1930	4-year aggregate	General male population (15 and over)
Mean (M)	28.81	28.83	28.99	28.70	28.77	38.40
Standard deviation (S. D.)	10.62	10.68	10.82	10.53	10.61	15.65
Median (Md)	25.81	25.76	25.89	25.64	25.72	36.49
First quartile (Q_1)	21.15	21.13	21.06	21.17	21.15	24.87
Third quartile (Q_3)	34.08	34.17	34.31	33.78	33.98	49.82
Interquartile range	12.93	13.04	13.25	12.61	12.83	24.95
Number of cases	35,352	36,089	46,106	52,487	170,034	43,829,205

FEDERAL INSTITUTIONS

Statistical constants	1926	1927	1929	1930	4-year aggregate	General male population (18 and over)	Northeastern Penitentiary
Mean (M)	33.80	33.35	32.62	33.52	33.55	40.40	34.45
Standard deviation (S. D.)	10.64	10.50	12.88	10.82	10.69	14.86	9.22
Median (Md)	31.74	31.56	31.32	31.59	31.62	38.36	33.14
First quartile (Q_1)	25.68	25.14	24.78	24.55	25.14	27.55	27.60
Third quartile (Q_3)	39.69	39.41	38.55	39.84	39.70	51.18	39.80
Interquartile range	14.01	14.27	13.77	15.29	14.56	23.53	12.50
Number of cases	5,009	4,728	9,307	9,413	28,457	40,335,487	1,000

[1] The year 1928 has been left out of many of our tables, since the census report for that year does not give the necessary information.

[1] Submitted for publication in January 1935.

As the rate of delinquency is greater in youth, age may have an etiological significance.

Table 1 shows the uniformity of age distribution of inmates sentenced to State and Federal penal and correctional institutions in the years 1926, 1927, 1929, and 1930. The statistical constants of the age distribution of the adult nondelinquent male population and those for the 1,000 Northeastern Penitentiary inmates are also given for comparison.

Table 1 demonstrates (*a*) the close uniformity of the ages of delinquents committed to State and Federal institutions in different years; (*b*) the preponderance of youthful persons among delinquents as compared with the nondelinquent population; and (*c*) the greater asymmetry of the age distribution of delinquents. The table also shows that while both the greater preponderance of young individuals and the greater asymmetry in the age distribution are evident in both State and Federal commitments, they are, nevertheless, more pronounced among State commitments and least so among the 1,000 inmates from Northeastern Penitentiary. The Federal commitments further suggest a progressive lowering of the average from year to year. A comparison of the average commitment age in 1923 with that shown in table 1 corroborates this tendency.

In table 2 the average annual commitments to State and Federal institutions, respectively, during the years 1926, 1927, 1929, and 1930 have been divided by the total population for each age period, giving relative rates of commitment.

TABLE 2.—*Commitment rates to State and Federal institutions according to age*

Age	State prisons and reformatories, rates per 10,000	Federal prisons, rates per 100,000	Northeastern Penitentiary, rate per 1,000,000	Age	State prisons and reformatories, rates per 10,000	Federal prisons, rates per 100,000	Northeastern Penitentiary, rate per 1,000,000
Under 15	0.2	0.1	----------	30 to 34	10.5	26.6	50.0
15 to 17	6.4	2.3	----------	35 to 39	7.5	21.6	36.8
Under 18	11.2	6.1	----------	40 to 44	5.7	16.0	27.1
18	21.7	11.7	4.0	45 to 49	4.3	12.0	19.9
19	28.0	19.7	----------	50 to 54	3.2	9.3	11.2
20	26.1	21 0	----------	55 to 59	2.6	6.8	5.8
20 to 24	23.0	25.2	23.4	60 to 64	1.9	4.5	2.1
21 to 24	22.2	26.3	----------	65 and over	1.0	2.1	1.5
25 to 29	16.4	29.3	45.9				

Here we have the characteristics which differentiate the age distribution of delinquents from that of nondelinquents.

It is of interest to know the effect that nativity and race, residence, nature of the crime, recidivism, and occupation may have on the age distribution of delinquents.

NATIVITY AND RACE

The comparison according to race and nativity shows a close resemblance in the percentage age distribution of native-born white and colored, admitted to State and Federal institutions during the period 1926 to 1930, inclusive. The age distribution of the foreign-born white, on the other hand, differs markedly from that of native-born whites. In ages below 25 the percentage of foreign born is one-half that of native born, while in ages above 35 this relation is reversed. A similar percentage comparison of ages of 1,000 inmates of the Northeastern Penitentiary, showed a relatively close resemblance in the age distribution of native-born whites and Negroes, though this resemblance was not as close as that observed for State and Federal commitments in general. There was a pronounced dissimilarity in the ages of native- and foreign-born whites among the inmates of Northeastern Penitentiary. The comparative age distribution of inmates according to race and nativity showed great consistency in different years.

Table 3 shows the comparative commitment rate of inmates according to age, nativity, and race. The absolute rates were obtained by dividing the number of commitments in the years 1926, 1927, 1929, and 1930 by the number of individuals in the population according to specific age, race, and nativity. The relative rates were obtained by considering the rate for all ages as one, and relating to this base the specific age rates for each nativity race group. The specific age rates of the Negro and the foreign-born whites were related to that of native-born whites to bring out more strikingly the differences in commitment rates of these groups at different ages. The table also shows rates of incarceration for the entire inmate population irrespective of nativity and race (columns 5 and 9).

TABLE 3.—*Rates of incarceration to State and Federal penal and correctional institutions per 10,000 population*

Age	Absolute rates				Relative rates				Negro over native-born white	Native-born white over foreign-born white
	Native-born white	Negro	Foreign-born white	Aggregate	Native-born white	Negro	Foreign-born white	Aggregate		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
15 to 19	49.8	113.1	69.0	57.0	1.16	1.05	3.63	1.28	2.27	0.72
20 to 24	91.0	200.0	63.1	100.9	2.13	1.88	3.32	2.26	2.20	1.44
25 to 29	67.2	178.2	38.3	75.8	1.57	1.68	2.02	1.70	2.64	1.75
30 to 34	46.4	129.9	30.2	51.8	1.09	1.22	1.59	1.16	2.81	1.54
35 to 39	35.2	91.5	22.8	38.0	.82	.86	1.20	.85	2.60	1.54
40 to 44	28.1	70.0	16.4	28.7	.66	.66	.86	.64	2.49	1.71
45 to 49	21.2	47.9	12.8	21.5	.50	.45	.67	.48	2.26	1.66
50 to 54	16.6	29.1	9.6	16.2	.39	.27	.51	.36	1.75	1.73
55 to 59	13.3	27.8	7.0	12.9	.31	.26	.37	.29	2.09	1.90
60 to 64	9.6	18.1	5.2	9.1	.22	.17	.27	.20	1.89	1.85
65 and over	4.8	11.1	2.6	4.6	.11	.10	.14	.10	2.31	1.85
All ages	42.7	106.2	19.0	44.6	1.00	1.00	1.00	1.00	2.49	2.25
Number of cases	138,304	42,362	13,308	193,974						

Column 10, $V=13.30$; column 11, $V=19.33$

The comparison of commitment rates for Negroes and native whites shows a consistently higher rate for Negroes at all ages, the ratios ranging from 1.89 to 2.81, with a weighted average ratio of 2.49. The unweighted mean ratio was 2.30, the standard deviation 0.306, and the coefficient of variation 13.30 (column 10).[2] The comparison of the relative rates (columns 6 and 7) according to age shows a close resemblance in the comparative rates of Negroes and whites of specific ages. The relative commitment rate of whites is somewhat greater in ages below 25 and above 45.

For native-born and foreign-born whites the comparison shows a higher commitment rate for native born at all ages above 20. The ratios in favor of the foreign born range from 1.44 to 1.90, except at ages 15 to 19. The weighted average ratio, irrespective of age, is 2.25 in favor of the foreign-born whites. The ratios given in column 11 show an average of 1.61, with a standard deviation of 0.313, and a coefficient of variation of 19.33. The variability of the ratios obtained from commitment rates of native- and foreign-born whites is greater than that for Negroes and native-born whites. This is borne out by columns 6, 7, and 8.

In comparing the commitment rates of foreign- and native-born whites the marked excess of foreign-born commitment rates in ages below 20 should not be overlooked. To the writer, this relatively greater commitment rate of foreign-born in ages below 20 appears to be of great sociological significance, especially when one takes into consideration the fact that several studies have shown the relatively greater commitment rates of first-generation Americans. These facts suggest the importance of cultural conflict in antisocial acts. In passing, it may be stated that the marked advantage in favor of the foreign-born is partly the result of their peculiar age distributions. Applying the rates shown in column 4 to the age distribution of the native population, we get an average commitment rate of 32.8 per 10,000 instead of 19.0 as shown in column 4.

A comparison of commitment rates according to age, nativity, and race for the 1,000 inmates, while of interest, cannot be more than suggestive, in view of the small number of cases and the complex selective factors which determine the decision of the court to send the inmate to Northeastern Penitentiary. Another difficulty is to find a parent population on the basis of which commitment rates may be computed. The 1,000 inmates sentenced to the institution represented 34 States. The majority of them (88.9 percent), however, were convicted in 9 States, including the District of Columbia. To obtain a base population, the age, nativity, and race composition of each of the 9 States were weighted in proportion to the percentage of inmates from each State, and combined. Using this base, commitment rates were

[2] The coefficient of variation is obtained by the formula $V=\frac{S.D.}{M}\times 100$.

computed for the 1,000 inmates. These rates, supplemented by relative rates and ratios of native whites and Negroes and native- and foreign-born whites are given in table 4.

TABLE 4.—*Rates of commitment to Northeastern Penitentiary per 100,000 population*

Age	Absolute rates			Relative rates			Negro over native-born white	Native-born white over foreign-born white
	Native-born white	Negro	Foreign-born white	Native-born white	Negro	Foreign-born white		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15 to 19	0.5	1.6	0	0.08	0.12	0	3.20	----------
20 to 24	6.6	17.8	7.8	1.03	1.36	1.08	2.70	0.85
25 to 29	13.4	17.1	12.8	2.09	1.31	1.71	1.28	1.09
30 to 34	13.3	19.7	14.6	2.08	1.51	2.03	1.48	.91
35 to 44	8.6	15.9	9.2	1.34	1.22	1.28	1.85	.93
45 to 54	4.6	5.8	5.2	.72	.45	.72	1.26	.88
55 to 64	1.5	0	1.0	.23	0	.14	0	1.50
65 and over	.3	0	.9	.05	0	.13	0	.33
All ages	6.4	13.1	7.2	1.00	1.00	1.00	2.05	.89

The maximum commitment rates for native whites, Negroes, and foreign-born whites are 13.1, 19.7, and 14.6, respectively. The weighted average rates are 6.4, 13.1, and 7.2. The commitment rate of the Negro is again more than twice the rate of the native whites; but, unlike that in table 3, the commitment rate of the foreign-born is somewhat higher. The standardization of the age distribution of the foreign-born, according to that of the native-born, lowers the commitment rate of the foreign-born to 6.4 per 100,000. Furthermore, the elimination of 31 cases convicted for the violation of the Federal Immigration Act, a crime not duplicated by native-born, lowers the commitment rate of the foreign-born to 5.6. This is lower than the rate for native-born whites, even though the margin of difference is rather small, especially when compared with the marked difference seen in table 3. The approximate parity of the crude commitment rate of native- and foreign-born whites is confirmed by conviction statistics of New York State for the year 1931. The conviction rate of Negroes in New York, however, is higher than that in tables 3 and 4. These rates are 173.6, 178.1, and 961.8 per 100,000 for native-born whites, foreign-born whites, and Negroes, respectively.[3]

The comparison of relative rates of native- and foreign-born and Negroes in tables 3 and 4 shows a marked difference. The excessive rate of commitment of the foreign-born in ages below 20 does not appear in table 4. The relative commitment rates with respect to age for the Negro and the white do not resemble each other as they do in table 3. The coefficients of variation obtained from columns 8 and 9 were far in excess of those obtained from comparable columns

[3] Second Annual Report of the Commission of Correction of Crime Statistics for the Year 1931. Feb. 15, 1933, table 23, pp. 139–140.

(10 and 11) of table 3. The wide disparity in the relative commitment rates of Negroes and native-born whites may be attributed in part to the fact that the northern Negro is, in a measure, an immigrant group. The differences found in tables 3 and 4 are probably real and likely to be substantiated by more extensive data. In both tables 3 and 4 for each race and nativity group we find a preponderance of youthful commitments and a greater concentration of ages toward the lower limit. In other words, nativity and race do not account for the differential age distribution of inmates of penal and correctional institutions.

RESIDENCE

Several studies have shown that crime rates vary in different regions. A comparative study of the age distribution of inmates in each of the States of the Union showed no consistent local variation. On the contrary, it brought out forcibly the characteristics pointed out in section 1 of this paper. This fact is borne out by a similar study for the inmates of Northeastern Penitentiary, limited to the States of New York, Pennsylvania, Ohio, and New Jersey, from which there were enough inmates to make the comparison valid. These comparative studies showed the average relation between the age distribution of delinquent and nondelinquent population to be rather negligible. Thus the correlation of median ages of inmates and the population in each of the States of the Union gave a coefficient of 0.116. Similarly low coefficients were obtained by correlating other statistical constants of the two sets of age distributions. In industrial States such as Massachusetts and Connecticut, with a relatively larger population of industrial age (some of it migratory from neighboring regions), the distribution of ages of inmates gives a relatively lower first quartile, an even lower median, and a still lower third quartile, resulting in a smaller interquartile range. This tendency is reflected somewhat in the age distribution of inmates, as shown by the fact that correlation of interquartile ranges for inmates and nondelinquent population in the different States gives a coefficient of 0.24.

The variability of the age distribution of delinquents in the different States was not much greater than that of the nondelinquent population. For instance, the variability of median ages among delinquents was 7.85, and among nondelinquents, 5.37. Similar results were obtained by comparing the variability of other constants in the two sets of statistics. The variability of ages of Federal inmates from different States appeared more stable; suggesting thereby that the greater age variability in State commitments results from differences in criminal law and the effectiveness of its enforcement.

To investigate the influence that the size of community may have on crime rate, we studied the commitment statistics of New York State in 1931. The correlation between size of community and rate of commitment was low. The apparent results probably underestimate the true relation, since statistics give us almost always the nominal residence or the place of apprehension, both of which may be sociologically erroneous. The analysis showed an underestimate of crime rates in our larger metropolitan areas. This is due to the fact that criminals operating in these areas are more likely to have their legal residence and their hide-out places at the outskirts of metropolitan regions. In the case of White Plains, N. Y., it was found that the annual crime rate for 1931 was 2,706.6 per 100,000, while for New York City the rate was 174.8, and the median rate for cities of the size of White Plains was 177.0. On the basis of this analysis it is believed that the crime rate in different communities is influenced by many factors, among which are efficiency of local police, proximity to metropolitan areas, and transportation facilities. The influence of these factors may completely overshadow any interrelation that may exist between the size of community and crime rate.

The relative distribution of ages of those committed from communities of different sizes is shown in table 5, based on the 1,000 cases of Northeastern Penitentiary. The absolute rates were obtained from a base using the population of the nine States which contributed 88.9 percent of our cases, combined after weighting each with the percentage of inmates contributed. The relative rates were obtained by equating the weighted average rates to one and relating the specific age rates to this base.

TABLE 5.—*Rates of commitment to Northeastern Penitentiary per 100,000 population according to density of population and age on commitment*

Age	Absolute rates				Relative rates			
	500,000 and over	100,000 to 499,999	2,500 to 99,999	Less than 2,500	500,000 and over	100,000 to 499,999	2,500 to 99,999	Less than 2,500
15 to 19	0.14	0.04	0	0.02	0.11	0.06	0	0.08
20 to 24	.96	.86	.62	.40	.77	1.24	1.38	1.60
25 to 29	2.30	1.25	.81	.64	1.89	1.81	1.80	2.56
30 to 34	2.50	1.40	.78	.45	2.05	2.02	1.73	1.80
35 to 44	1.56	.88	.59	.37	1.28	1.26	1.31	1.48
45 to 54	.83	.44	.35	.16	.68	.64	.78	.64
55 to 64	.18	.18	.13	.02	.15	.26	.29	.08
65 and over	.12	.07	0	.03	.10	.10	0	.12
All ages	1.22	.69	.45	.25	1.00	1.00	1.00	1.00
Coefficient of variation (V)					83.65	78.25	76.76	84.95

Table 5 shows a progressive and marked increase in the commitment rates with the size of community. Because of the small number of cases, this evidence cannot be considered more than suggestive. If more extensive statistics showed as close a correlation between the

size of community and the rate of Federal commitments, it would suggest the efficiency of local police to be the important variable which obscures the interrelation between size of community and crime rate. The relative commitment rates at different ages for communities of different sizes show no great variations. The coefficients of variation are very much the same. There is, however, a progressive change which might be significant. The rates for communities of 500,000 and over increase slowly at first, reaching a maximum at ages 30 to 34 and from there declining rather sharply. For communities of smaller size the initial rates increase more rapidly, reach a maximum earlier, but decrease somewhat slowly. This tendency is most marked for communities of less than 2,500 population. This may suggest the tendency of criminals to move to larger metropolitan areas subsequent to their early conflicts with the law. The standardization of age distribution of population in communities of various sizes so as to conform with that found in communities of 500,000 and over does not alter significantly the relations shown in table 5.

The most outstanding fact in our analysis of ages of inmates of penal and correctional institutions is that, despite minor variations from State to State and from one community to another, the essential characteristics of age distribution of inmates remain the same, indicating that, as far as our evidence goes, these characteristic features are not influenced significantly by residence.

RECIDIVISM

We have found so far that nativity, race, and place of residence do not account for the unique age distribution of inmates. It is of interest to study the extent to which the age distribution of first offenders and recidivists varies inter se.

TABLE 6.—*Percentage distribution of ages of first offenders and recidivists*

Age	Inmates of State and Federal institutions						Northeastern Penitentiary		
	1926			1927					
	First offense	Recidivists	Difference	First offense	Recidivists	Difference	First offense	Recidivists	Difference
15 to 17	4.9	3.6	+1.3	5.5	3.7	+1.8	0.6	1.3	−0.7
18	5.7	4.6	+1.1	5.6	3.8	+1.8			
19	7.2	5.9	+1.3	6.8	5.1	+1.7			
20	6.7	5.8	+.9	6.0	5.1	+.9	10.7	14.6	−3.9
21 to 24	20.6	21.0	−.4	20.7	21.1	−.4			
25 to 29	18.2	21.6	−3.4	17.1	21.1	−4.0	22.3	22.3	0
30 to 34	11.7	13.0	−1.3	11.8	14.0	−2.2	20.6	25.0	−4.4
35 to 39	9.0	9.7	−.7	9.4	10.1	−.7	17.2	17.2	0
40 to 44	6.1	6.1	0	6.6	6.2	+.4	13.7	8.4	+5.3
45 to 49	3.8	3.7	+.1	4.4	3.8	+.6	8.6	5.8	+2.8
50 to 54	2.9	2.3	+.6	2.6	2.6	0	3.2	3.9	−.7
55 to 59	1.5	1.3	+.2	1.7	1.6	+.1	1.7	1.1	+.6
60 to 64	.8	.8	0	1.0	1.0	0	.8	0	+.8
65 and over	.9	.6	+.3	.8	.8	0	.6	.4	+.2
Number of cases	17,040	14,021		18,863	14,869				

We find that the age distribution of first offenders is essentially the same as that of recidivists. In fact, with recidivists the differential age distribution, characteristic of inmates of penal and correctional institutions, is more pronounced. This is of great importance, since, on the average, recidivists are the more confirmed delinquents. The comparative age distribution of first offenders and recidivists would indicate that, on the average, a younger first offender has a greater likelihood of becoming a repeater than an older first offender. This fact is of great importance for parole and in efforts toward rehabilitation.

The more marked characteristic deviation of the age distribution of recidivists is reflected in almost all crimes.

TABLE 7.—*Quartile age distribution of commitments to State and Federal institutions in 1926, according to the type of crime and recidivism*

Offense		Median	First quartile	Third quartile	Interquartile range
All offenses	First offenders	26.32	21.12	35.00	13.88
	Recidivists	27.12	21.97	34.81	12.84
Homicide	First offenders	31.56	25.33	41.16	15.83
	Recidivists	30.69	25.37	39.26	13.89
Rape	First offenders	27.05	21.61	38.37	16.75
	Recidivists	27.00	21.86	36.56	14.95
Robbery	First offenders	22.87	19.97	27.30	7.33
	Recidivists	24.75	21.65	29.50	8.35
Assault	First offenders	28.63	23.43	38.53	15.10
	Recidivists	29.34	24.38	37.06	12.68
Burglary	First offenders	22.69	19.58	28.02	8.44
	Recidivists	25.28	20.89	31.80	10.91
Forgery	First offenders	26.55	21.67	33.98	12.31
	Recidivists	28.69	23.27	37.23	13.96
Larceny and related offenses	First offenders	24.37	20.34	31.84	11.50
	Recidivists	24.89	20.77	31.67	10.90
Embezzlement	First offenders	33.26	27.57	42.11	14.54
	Recidivists	31.25	26.18	37.95	11.77
Fraud	First offenders	34.30	26.85	42.73	15.88
	Recidivists	34.78	26.22	42.63	16.41
Having stolen property	First offenders	23.85	20.37	29.28	8.91
	Recidivists	24.89	21.45	30.25	8.80
Larceny	First offenders	23.15	19.85	24.89	9.04
	Recidivists	24.34	20.39	30.40	10.01
Sex offenses	First offenders	33.03	25.99	42.63	16.94
	Recidivists	33.53	25.99	43.04	17.05
Violation of liquor laws	First offenders	36.69	28.54	45.46	16.92
	Recidivists	36.38	28.44	46.44	18.00
Violation of drug laws	First offenders	33.32	27.29	41.10	13.81
	Recidivists	34.15	28.48	41.00	12.52
Carrying weapons	First offenders	25.76	21.19	32.57	11.38
	Recidivists	27.90	23.39	34.40	10.97
Nonsupport and neglect of family	First offenders	31.12	25.63	37.96	12.33
	Recidivists	33.75	27.83	40.08	12.25
Other offenses	First offenders	27.17	20.87	35.83	14.96
	Recidivists	27.92	21.94	38.10	16.16
Coefficient of variation (V)	First offenders	15.06	13.14	15.66	23.74
	Recidivists	13.24	11.42	12.85	21.59
Coefficient of correlation (r) for first offenders and recidivists.		.99	.96	.96	.88

The age distribution of recidivists is relatively more concentrated, as indicated by the generally lower interquartile ranges. The consistently lower coefficients of variation for recidivists indicate that their age distribution is somewhat more consistent in different crimes. But above all, the most pronounced indication is the close similarity of the age distribution of first offenders and recidivists convicted for

the same crime. This close resemblance is reflected in the unusually high coefficients of correlation obtained by correlating various statistical constants obtained from the age distribution of first offenders and recidivists convicted for respective crimes.

Crimes in which the proportion of recidivists is less tend to have a higher average commitment age. For instance, correlating the median ages in table 7 with the percentage of first offenders reported for each crime gave a coefficient of 0.49. There is also some positive correlation between the median age and the number of commitments for a given offense.

The comparative age distribution of first offenders and recidivists according to the number of prior commitments is shown in table 8.

TABLE 8.—*Age distribution of inmates admitted to State and Federal penal and correctional institutions in 1926 and 1927, according to recidivism*

Prior commitment	Median	First quartile	Third quartile	Interquartile range	Number of cases
No previous commitment	26.49	21.17	35.50	14.33	35,970
No previous commitments to prisons, or reformatories, but to jails	24.82	20.58	32.20	11.62	10,105
One prior commitment only	24.42	20.34	31.65	11.31	6,796
Two prior commitments	25.40	20.79	32.87	12.00	2,054
Three or more prior commitments	26.69	21.93	33.50	11.57	1,255
Previous commitment to prison or reformatory	28.51	23.23	33.69	13.46	18,829
One prior commitment only	27.30	22.43	34.48	12.05	12,414
Two prior commitments	29.75	24.54	37.61	13.07	4,087
Three or more prior commitments	35.14	28.06	44.14	16.08	2,328

Recidivists who have served prior sentences in jails are, on the average, younger than first offenders, regardless of the number of previous jail commitments. Also the age distribution is more concentrated for recidivists who have served prior prison or reformatory sentences; even though somewhat older than first offenders, the age difference is much less than normally expected. Recidivists with prior prison sentences show a lower proportion in the higher ages and a smaller interquartile range.

Table 9 gives the quartile age distribution of 1,000 inmates according to the number of prior offenses.

TABLE 9.—*Quartile distribution of ages of inmates confined in Northeastern Penitentiary according to recidivism*

Recidivism	Median	First quartile	Third quartile	Interquartile range
First offense	33.96	28.09	41.27	13.18
Recidivists	32.35	27.04	38.41	11.37
Second offense	32.58	26.65	38.81	12.16
Third offense	31.97	27.28	37.29	10.01
Fourth offense	32.04	27.30	39.10	11.80
Fifth offense or more	32.50	27.64	39.25	11.61

Regardless of the number of former commitments, the recidivists have a lower average age, a relatively smaller proportion of older men, and a smaller interquartile range.

Our analysis of the age distribution of recidivists and first offenders shows that deviations in the age distribution characteristic of inmates of penal and correctional institutions are more accentuated among recidivists.

TYPE OF CRIME

The age distribution of inmates committed for different crimes came up incidently in the preceding section; however, the problem is of sufficient significance to receive a more careful analysis.

Table 10 gives the quartile age distribution of offenders committed to State and Federal institutions in the years 1926, 1927, 1929, and 1930, and arrests in New York State for 1930 and 1931, according to crime.

TABLE 10.—*Quartile distribution of ages, asymmetry, and percentage of cases according to the type of crime*

Offense	State and Federal institutions						New York State arrests		
	Median	First quartile	Third quartile	Interquartile range	$\frac{Md-Q_1}{Q_3-Md}$	Percent	Offense	Average median	Percent
Homicide	30.17	24.05	39.77	15.72	1.51	4.28	Homicide	29.80	2.02
							Homicide, auto	29.40	3.06
Rape	27.86	22.07	38.76	16.69	1.88	2.74	Rape	23.85	4.37
Robbery	23.49	20.32	28.24	7.92	1.50	7.65	Robbery	23.40	11.60
Assault	29.19	23.47	38.24	14.77	1.58	3.62	Assault	31.05	17.07
Burglary	23.66	19.96	29.51	9.55	1.58	14.38	Burglary	22.95	14.37
Forgery	27.48	22.33	35.81	13.48	1.62	5.22	Forgery	29.80	2.41
Larceny and related offenses.	24.30	20.32	31.33	11.01	1.77	20.75			
Embezzlement	33.96	27.32	42.73	15.41	1.32	.73			
Fraud	33.65	26.26	42.38	16.12	1.18	1.33			
Receiving stolen property.	23.67	20.13	29.30	9.17	1.60	2.67	Receiving stolen property.	33.05	1.62
Larceny	23.76	20.04	29.79	9.75	1.63	16.05	Larceny	30.25	11.66
							Larceny (auto)	20.30	10.30
Sex, not rape	32.48	25.20	42.35	17.15	1.36	1.84	Sex, etc	29.25	2.40
Violation liquor laws	34.61	26.93	44.26	17.33	1.26	8.09			
Violation of drug laws	34.66	28.00	41.71	13.71	1.06	2.93			
Carrying weapons	26.88	22.25	33.54	11.29	1.44	.64	Other felonies	30.35	3.21
Nonsupport or neglect family.	33.19	27.33	39.88	12.65	1.14	.97	Family and children	32.85	1.63
Others	28.51	22.23	38.63	16.40	1.61	5.85	Intoxicated when driving.	38.00	.21
Not reported	26.98	21.15	35.23	14.08	1.42	.26	Misdemeanor, sec. 552	29.20	11.06
							Fugitives	31.45	2.49
							Arson	35.55	.52
Number of all cases	148,619							52,522	

A wide variation in the age distribution of offenders charged with different crimes is apparent, and the variation remains rather constant from year to year. There is a marked association between a low median age, a smaller interquartile range, and a more asymmetrical distribution of the cases around the median. State and Federal offenders with the lowest median age, lowest interquartile range, and greatest asymmetry about the median are convicted for

robbery, burglary, having stolen property, larceny, and carrying weapons, crimes which may be characterized as violent and impulsive. On the other hand, offenders with the highest median age, greatest interquartile range, and lowest asymmetry about the median, are convicted for violation of drug laws, violation of liquor laws, embezzlement, fraud, and nonsupport or neglect of family, which may be characterized as not violent nor impulsive, in some instances technical crimes. The first set of 5 crimes contributed 41.39 percent, and the second set 14.05 percent. The first set of crimes are most prevalent among State commitments, while the second set are more prevalent among Federal commitments. This fact is largely responsible for the more advanced age and relatively wider interquartile range of Federal commitments.

In New York the lowest median ages are found among arrests for larceny (auto), burglary, robbery, rape, and misdemeanor (section 552), which are the more impulsive and violent crimes. The highest median ages are found among arrests for intoxication while driving, arson, receiving stolen property, family and children (nonsupport), and fugitives. Compared with the first set of crimes the latter are less violent and direct. The first set of arrests in New York State constituted 51.70 percent, the second 6.46 percent. A comparison of the arrest experience of New York State with the State and Federal commitments shows substantial agreement. This agreement is not as close as it might be, since we are comparing arrests with commitments, since the census data throws together both State and Federal commitments, and since, despite the wide diversity in the criminal law and procedure in different States, the Census Bureau groups crimes under relatively few major captions.

Table 11 shows the age distribution of the 1,000 inmates of Northeastern Penitentiary according to crime. The last caption, "All others", includes all offenses with less than 10 offenders.

TABLE 11.—*Quartile age distribution of 1,000 inmates of Northeastern Penitentiary according to offense and percentage of cases committed for each offense*

Offense	Median	First quartile	Third quartile	Interquartile range	$\frac{Md-Q_1}{Q_3-Md}$	Percent
Bank act	39.64	33.19	49.46	16.27	1.37	3.9
Bankruptcy	42.86	38.75	46.67	47.87	.93	2.0
Counterfeiting	32.14	27.35	38.48	11.13	1.32	38.6
Dyer act	28.25	23.34	34.00	10.60	1.17	6.0
Forgery	36.67	32.14	41.67	9.53	1.10	2.4
Immigration	28.63	25.23	33.21	7.98	1.35	3.0
Impersonation	37.08	30.31	44.69	14.38	1.12	2.1
Interstate commerce	31.67	21.33	38.33	17.00	.64	1.6
Mail theft	31.67	27.19	37.50	10.31	1.30	2.6
Mann act	28.75	25.88	34.06	8.18	1.85	2.3
Narcotics	35.20	29.74	39.80	10.06	.84	9.2
Post office theft	27.50	21.67	34.37	12.70	1.18	1.3
Postal laws	36.53	30.52	40.36	9.84	.63	8.4
Prohibition	34.41	27.19	39.78	12.59	1.93	9.6
Robbery	22.67	21.33	25.20	3.87	1.89	1.2
All others	35.66	30.53	41.07	10.54	1.06	5.8

Offenders with the lowest median age are those convicted for robbery, post office theft, violation of the Dyer act, immigration act, Mann act, and mail theft. The interquartile ranges for these crimes are among the lowest, and asymmetry among the highest, even though the association in this case is not as close as in table 10. The six crimes mentioned contributed 21 percent of the convictions, and, perhaps with the exception of the immigration act, they may all be regarded as the more violent and direct crimes against the Federal Government. The crimes of offenders with the highest median age and lowest asymmetry are violation of the Bankruptcy and Bank Acts, impersonation, forgery, postal laws, and narcotics. These crimes may be characterized as less violent, less direct, and more technical; they contributed 28 percent of the convictions. Tables 10 and 11 both indicate that crimes with the lowest median age, smallest interquartile range, and greatest asymmetry around the median tend to be the more violent and direct; while those with the highest median age, largest interquartile range, and least asymmetry tend to be the less violent, the more indirect, and more technical crimes. In fact, if it were not for the complication introduced by occupation, one might use the size of interquartile range and the degree of asymmetry in age distribution as an index of differentiation of offenders from general population. Our analysis of age distribution according to crime has shown that characteristics of relative youthfulness, a greater concentration of ages, and a less symmetrical age distribution generally hold true for all offenders. These characteristics are most pronounced in crimes distinguished by violence and directness, and they are least apparent in the less direct and more technical crimes.

OCCUPATION

There is evidence that incidence of crime varies in different occupational groups. The influence of occupation upon behavior may be conditioned largely by such factors as income, associates, social status, mobility, contact with public, seasonality of occupation, permanency of occupation, occupational ethics, occupational maladjustments, legal restrictions, and occupational selection.

Studies of occupational distribution of prisoners are rare, because of the inherent difficulties involved. Despite these difficulties it is believed that a study of occupational distribution of inmates is important enough to warrant every effort. For our standard we took the occupational distribution of males, 18 years old and over, in the States of New York, Pennsylvania, Ohio, and New Jersey, according to the United States Census of 1930. Seventy-four percent of the inmates were derived from these four States. The occupations of the 1,000 inmates were grouped so as to agree with the Census Bureau list of occupations for the four States. The occupational distribu-

tion among the inmates was compared with the adopted standard and those occupations which showed a marked excess or deficiency are listed in table 12 with occupational distribution for the entire 1,000 inmates grouped in 10 major occupational pursuits.

TABLE 12.—*Occupational distribution of 1,000 inmates of Northeastern Penitentiary compared with that of the male population of 18 years and over in the States of New York, Pennsylvania, Ohio, and New Jersey*

Occupation	Theoretical expectation	Actual	Difference	S. D. Difference
General and not specified labor	15.658	74	+58.342	+15.25
Bankers and bank officials	2.266	21	+18.734	+12.46
Wholesale dealers, import and export	3.107	23	+19.893	+11.30
Owners, and managers, truck, transfer, and cab companies	1.174	13	+11.826	+10.92
Barbers, hairdressers, and manicurists	7.579	33	+25.421	+9.27
Servants	12.360	41	+29.640	+8.64
Pressmen and plate printers	1.698	13	+11.302	+8.57
Brokers, commercial loan, and not specified	1.690	10	+8.310	+6.40
Waiters	6.690	23	+16.340	+6.35
Postmasters	.352	4	+3.648	+6.15
Bakers	5.127	18	+12.873	+5.70
Mechanics	20.240	45	+24.760	+5.56
Civil engineers and surveyors	3.182	12	+8.815	+4.95
Chauffeurs, truck, and tractor drivers	33.805	62	+28.195	+4.93
Tailors	7.747	21	+13.253	+4.78
Bookkeepers and cashiers	8.331	19	+10.669	+3.71
Salesmen	46.379	70	+23.621	+3.55
Musicians, teachers of music	3.321	9	+5.679	+3.12
Saw and planing mills, labor	.984	4	+3.016	+3.04
Forestry and fishing, all other occupations	.713	3	+2.287	+2.71
Restaurant, cafe, and lunchroom keepers	3.890	9	+5.110	+2.60
Officials and inspectors (U. S.)	.786	3	+2.214	+2.50
Actors and showmen	1.878	5	+3.122	+2.28
Plumbers, gas and steam fitters	9.303	16	+6.697	+2.21
Mail carriers	3.117	7	+3.883	+2.20
Technical engineers	8.935	15	+6.065	+2.04
Physicians and surgeons	4.245	0	−4.245	−2.06
Laborers, public service	4.397	0	−4.397	−2.10
Deliverymen, bakeries and stores	4.520	0	−4.520	−2.13
Brick, tile, and glass industries	4.969	0	−4.969	−2.23
Laborers, porters, and helpers in stores	5.219	0	−5.219	−2.29
Policemen	5.295	0	−5.295	−2.31
Guards, watchmen, and doorkeepers	5.470	0	−5.470	−2.35
Agents, collectors, and credit men	5.498	0	−5.498	−2.35
Commercial travelers	5.817	0	−5.817	−2.42
Iron and steel machinery and vehicle industry (operators)	20.914	10	−10.914	−2.47
Clerks in stores	6.787	0	−6.787	−2.61
Apprentices, building and hand trades	.706	0	−.706	−2.65
Managers and officials, manufacturing	10.321	2	−8.321	−2.65
Compositors	6.979	0	−6.979	−2.66
Retail dealers	50.546	32	−18.546	−2.72
Carpenters	27.311	13	−14.311	−2.78
Engineers, stationary	8.468	0	−8.468	−2.92
Insurance agents, managers and officials	8.550	0	−8.550	−2.94
Machinists	23.046	8	−15.046	−3.17
Foremen, overseers, manufacturing	10.919	0	−10.919	−3.32
Laborers (industrial)	85.513	14	−71.513	−4.57
Farm laborers, wage workers	28.554	0	−28.554	−5.42
Operatives	87.618	25	−62.618	−7.00
Farmers, owners and tenants	49.709	0	−49.709	−7.33
Major groups				
Domestic and personal service	56.408	150	+93.592	+12.83
Forestry and fishing	1.513	5	+3.427	+2.84
Clerical occupations	73.060	91	+17.940	+2.18
Trades	155.333	176	+20.667	+1.80
Professional service	54.609	67	+12.371	+1.72
Transportation and communication	108.314	124	+15.686	+1.60
Public service	25.269	8	−17.269	−3.48
Extraction of minerals	33.742	11	−22.742	−3.98
Manufacturing and mechanical industries	409.587	344	−65.587	−4.22
Agricultural	82.165	24	−58.165	−6.70

The first column gives the number in a given occupation per 1,000 males in the States of New York, Pennsylvania, Ohio, and New Jersey. The second column shows the number of inmates pursuing this same occupation. The third column gives the difference between the figures in columns 1 and 2, and the fourth column gives this difference in terms of the standard deviation of the difference. The occupations are arranged in order of the size of difference divided by standard deviation. Occupations showing a plus or minus difference of less than 2 S. D. are not shown in the table. Occupations showing an excess of 3 S. D. or more are general and nonspecified labor, bankers and bank officials, etc., down to and including saw and planing-mill laborers. These occupations are followed by about 182 persons per 1,000 males of the 4 States, while among the 1,000 inmates 515 persons report them as their occupations. Occupations with an excess of 2 S. D. or more are followed by 210 civilians and 573 inmates. Occupations which show less than their quota among inmates begin with physicians, with a difference of −2.06 S. D. and end with farmers, owners, and tenants with a difference of −7.33 S. D. Among the civilian population 471 pursue these occupations, while among inmates only 104 reported them as their occupations. Occupations showing a difference of −3 S. D. or more are followed by about 285 civilians out of every 1,000 employed males, and were reported by only 45 inmates.

At the end of table 12 the occupations of the 1,000 inmates are given according to the major occupational groupings used by the Bureau of the Census. The occupations reported by inmates are compared with occupational distribution of nondelinquents in the 4 States. Among inmates the occupations of domestic and personal service, forestry and fishing, clerical occupations, trade, professional service, and transportation and communications are more often reported than among nondelinquents; while occupations of public service, extraction of minerals, manufacture and mechanical industries, and agriculture are reported with less frequency. Particularly striking is the excessive number of inmates reporting occupations classified under domestic and personal service. Among nondelinquents 56 persons out of 1,000 follow these pursuits; 150 inmates report these occupations.

We feel that the differences shown in table 12 are generally significant, where the difference exceeds ±3 S. D. These differences are accountable in terms of socio-economic, legal, and other factors associated with different occupational pursuits.

Table 13 shows the age distribution of inmates according to occupation reported, as compared with the age distribution of nondelinquents reporting the same occupations. Only those occupations are given which were reported by at least 10 inmates. The age distribution of all inmates is shown in terms of major occupational groupings. The

table is arranged according to the size of difference in the interquartile range of ages for nondelinquents and the interquartile range of delinquents for each occupation.

TABLE 13.—*Quartile distribution of ages of 1,000 inmates of Northeastern Penitentiary compared with that of employed male population of 18 years old and over in the States of New York, Pennsylvania, Ohio, and New Jersey*

Occupation	Median		First quartile		Third quartile		2-Q range		Difference, 2-Q range
	Civilian	Inmates	Civilian	Inmates	Civilian	Inmates	Civilian	Inmates	
General and not specified labor	41.03	32.81	28.57	26.83	54.27	38.19	26.00	11.36	−14.64
Painters, glaziers, varnishers (building)	40.36	30.00	20.47	26.94	51.22	34.58	20.75	7.64	−13.11
Iron and steel machinery and vehicle industries (operators)	35.98	31.00	26.73	26.25	45.89	33.50	19.16	7.25	−11.91
Bakers	37.59	38.61	27.57	26.39	48.08	35.00	20.51	8.61	−11.90
Barbers, hairdressers, manicurists	38.85	33.86	29.48	30.11	49.49	38.59	20.01	8.48	−11.53
Operatives	35.67	31.39	25.96	25.31	46.64	34.86	20.68	9.55	−11.13
Transportation, other occupations	38.67	33.25	29.17	28.75	49.29	38.04	20.12	9.29	−10.83
Porters, except in store	38.06	30.00	28.71	25.83	49.15	38.75	23.32	12.92	−10.40
Domestic and personal, all other occupations	38.06	33.33	28.01	26.78	49.79	38.93	21.78	12.15	−9.63
Salesmen	34.32	34.52	26.60	30.36	44.47	39.31	17.87	8.95	−8.92
Clerks, except in store	30.32	30.63	23.06	25.19	41.69	35.28	18.63	10.09	−8.54
Wholesale dealers, import and export	43.36	42.50	35.46	38.12	52.75	47.25	17.29	9.13	−8.16
Servants	37.08	36.00	28.04	30.28	47.45	41.56	19.41	11.28	−8.13
Other industries (labor)	36.96	28.33	26.60	25.42	47.47	38.75	20.67	13.13	−7.34
Technical engineers	37.79	35.83	29.49	29.58	48.87	42.08	19.38	12.50	−6.88
Plumbers, gas- and steam-fitters	36.79	31.00	28.14	23.75	46.01	35.00	17.87	11.25	−6.62
Chauffeurs, truck and tractor drivers	31.03	29.17	25.61	25.94	38.75	33.59	13.14	7.65	−5.49
Electricians	32.69	31.50	26.14	27.19	41.50	37.08	15.36	9.89	−5.47
Brokers, commercial loan and not specified	41.36	34.00	32.18	31.50	51.91	45.83	19.73	14.33	−5.40
Retail dealers	42.30	35.00	33.89	30.00	52.37	43.33	18.48	13.33	−5.15
Civil engineers and surveyors	37.22	37.50	28.92	30.00	47.14	43.33	18.22	13.33	−4.89
Bookkeepers and cashiers	30.75	34.58	27.23	30.62	41.86	40.42	14.63	9.80	−4.83
Tailors	44.20	30.62	36.36	26.61	53.16	38.75	16.80	12.14	−4.66
Accountants and auditors	34.98	42.49	28.09	36.87	43.98	48.13	15.89	11.26	−4.63
Waiters	34.61	32.50	27.14	26.75	43.23	39.06	16.09	12.31	−3.78
Mechanics	32.92	29.81	26.09	25.48	42.02	37.75	15.93	12.27	−3.66
Bankers, brokers, and money lenders	40.75	45.36	31.90	33.39	51.12	52.08	19.21	18.69	−.52
Bankers and bank officials	43.29	48.12	34.54	36.56	54.04	55.75	19.50	19.19	−.31
Owners, managers, truck, transfer and cab companies	40.26	28.13	32.28	24.06	49.40	41.25	17.02	17.19	+.17
Pressmen and plateprinters	35.71	33.75	26.99	25.62	45.42	44.58	18.43	18.96	+.53
Carpenters	43.55	37.50	33.63	27.81	54.12	49.38	20.49	21.57	+1.08
Major groups									
Agricultural	45.50	30.00	32.21	25.71	58.12	37.50	25.91	11.79	−14.12
Transportation and communication	36.26	30.65	27.77	26.54	46.89	36.11	19.12	9.57	−9.55
Professional service	37.44	33.47	28.74	28.67	50.03	41.13	21.29	12.46	−8.83
Domestic and personal service	39.37	34.69	28.57	28.71	50.41	40.57	20.84	11.86	−8.78
Manufacturing and mechanical industries	38.36	31.88	28.47	26.61	49.14	38.66	20.67	12.05	−8.62
Trades	38.45	37.14	29.05	31.63	49.27	45.54	20.22	13.91	−6.31
Clerical occupations	31.17	32.49	23.47	26.99	42.51	45.13	19.04	18.14	−.90
Extraction of minerals	38.49	41.25	28.33	28.75	48.56	48.12	20.23	19.37	−.86

The table shows that, with few exceptions, the distribution of ages of inmates is characterized by a lower median, a smaller interquartile range, and greater asymmetry of ages around the median, typical of age distribution of inmates. Moreover, a standardization of occupational distribution of inmates according to that of nondelinquents showed no significant change in the age distribution. This indicates that the unique age distribution of inmates cannot be accounted for in terms of occupational selection, although there are wide variations in the age distribution of inmates pursuing different occupations. These variations indicate that occupations which are under the surveillance of the law, and therefore more subject to technical crimes, tend to have an age distribution among delinquents which approximates that of nondelinquents.

The occupational distribution of inmates also shows a marked interrelation between specific crimes and occupations. This is brought out in table 14, where the occupations showing a difference of $\pm$ 3 S. D. in table 12 are classified according to the nature of the crime.

Of the inmates reporting occupations of bankers and bank officials, 90.5 percent were convicted for violation of the Bank Act, and of those reporting the occupations bookkeepers and cashiers, 57.9 percent were convicted for violation of the Bank Act; on the other hand, only 3.9 percent of the total inmate population was convicted on this charge. Of the entire inmate population, only 2 percent were convicted for violation of the Bankruptcy Act, while convictions for this offense among wholesale dealers constituted 39 percent. Of the total prison population, 38.6 percent were convicted for counterfeiting, the corresponding percentages of convictions for pressmen and printers, waiters, and chauffeurs, truck and tractor drivers were 84.6 percent, 69.4 percent, and 54.9 percent, respectively; the corresponding percentages for bankers and bank officials, and wholesale dealers were 0 percent and 8.7 percent, respectively. That the occupation of an inmate determines in some measure the nature of his crime is quite evident from table 14.

TABLE 14.—*Percentage distribution of commitments according to crimes in certain occupational classes*

Occupational classes	Number	Percent															
		Bank act	Bankruptcy	Counterfeiting	Dyer act	Forgery	Immigration	Impersonation	Interstate commerce	Mail theft	Mann act	Narcotics	Post office theft	Postal laws	Prohibition	Robbery	All others
All occupations	1,000	3.9	2.0	38.6	6.0	2.4	3.0	2.1	1.6	2.6	2.3	9.2	1.3	8.4	9.6	1.0	5.8
General and not specified labor	74			51.3	2.7	2.7	6.8			2.7	1.4	8.1	2.7	4.0	12.2	2.7	2.7
Bankers and bank officials	21	90.6					4.7										4.7
Wholesale dealers (import and export)	23	4.4	39.0	8.7					4.4			4.4	4.4	17.3	8.7		8.7
Owners, managers, truck, transfer, and cab companies	13			15.4	15.4	15.4			15.4			23.0	7.7		7.7		
Barbers, hairdressers, manicurists	33			42.5	9.1	3.0						24.2			18.2		3.0
Servants	42			38.0		7.1	2.4	2.4		4.8	4.8	11.9		9.5	4.8	2.4	11.9
Pressmen and plateprinters	13			84.6	7.7										7.7		
Brokers, commercial, not specified	10			30.0		10.0								40.0			20.0
Waiters	23			64.4		4.4	4.4					13.0		4.4	4.4		
Bakers	18			50.0	5.6		5.6		5.6	5.6		16.4		5.6	5.6		
Mechanics	45			42.3	9.0		4.4	4.4	4.4		2.2	4.4	2.2	2.2	15.7	4.4	4.4
Civil engineers and surveyors	12			41.8	25.0			8.3				8.3		8.3			8.3
Chauffeurs, truck and tractor drivers	62			54.9	8.0		1.6			1.6	1.6	14.6		3.3	8.0	1.6	4.8
Tailors	21			52.5			14.4	4.7		4.7	14.3		4.7			4.7	
Professional, all other occupations	23			39.0	17.3		4.4					4.4		13.0	4.4		17.5
Domestic and personal, all other occupations	26			35.0	3.8	3.8	3.8					26.9		3.8	7.7	3.8	11.4
Bookkeepers and cashiers	19	57.9		15.7		10.5								5.3	5.3		5.3
Salesmen	70			37.1	7.2	5.7	2.9	2.9		1.4	5.7	11.5		15.7	5.7		4.2
Other industries (labor)	14			50.1	7.1				7.1		14.3	7.1					14.3
Domestic and personal service	150			42.0	2.7	5.3	2.7	1.4	.7	3.4	1.4	16.0	.7	6.7	8.8		8.2
Agricultural	24			16.7	20.4		4.2				8.4		4.2	8.4	33.5		4.2
Manufacturing and mechanical industries	344	.6	.9	48.0	5.2	.9	4.6	2.0	2.6	3.5	3.2	8.4	1.4	3.0	9.6	2.0	4.1
Extraction of minerals	11			27.1				9.2						36.2	18.3		9.2

The analysis of occupations of 1,000 inmates of Northeastern Penitentiary indicates a differential incarceration rate for different occupations. Broadly speaking, these rates are significant, although it must be remembered that the occupational classification of inmates was based on the statement of the inmate and subject to some falsification. This falsifying tendency is probably responsible for the excessive number of engineers, and the markedly deficient number of laborers and operatives (table 12). It cannot be invoked, however, to account for the marked excess of general and nonspecified labor, nor for the excessive number of domestics; the existing bias would have tended to lower the number of persons reporting these pursuits so that these excesses are all the more significant. It seems that persons showing a higher quota among Federal inmates are those without a definite occupational pursuit, those with occupations which are under the surveillance of the Federal Government, those with occupations requiring great mobility and frequent contact with strangers, and those in domestic and personal service. There is also some indication that persons in urban communities, pursuing occupations subject to seasonal fluctuation, and running business establishments which may serve as a decoy of vice, contribute more than their share. There is a higher incarceration rate for occupations requiring no skill and little exertion. On the other hand, occupations contributing less than their quota are officials and supervisors in industry, highly skilled industrial workers, the more strenuous occupations with little opportunity for contact with strangers, and especially farmers.

While the age distributions of inmates for the various occupational pursuits show wide differences, they reflect, with few exceptions, the typical deviations already indicated. The interrelation between certain occupations and specific offenses is striking, providing us with some evidence of the importance of environment in crime.[5]

SUMMARY

1. The age distribution of inmates of State and Federal penal and correctional institutions shows no significant variation in different years (table 1).

2. The age distribution of inmates differs from that of nondelinquent population by higher proportion of younger men, by a smaller interquartile range, and greater asymmetry about the median; these characteristics are most pronounced among State commitments (table 1).

3. There is a wide variation in commitment rates at different ages (table 2).

4. Commitment rates for native- and foreign-born whites and for Negroes show a significantly higher rate for the Negro and a signifi-

[5] Since the publication of the recent pamphlet of the United States Bureau of the Census on Prisoners in Penal and Correctional Institutions, for the years 1931 and 1932, the new material has been analyzed in the same way as that for the years 1926, 1927, 1929, and 1930, and the results are essentially the same.

cantly lower rate for foreign-born in State and Federal commitments. At Northeastern Penitentiary and in New York State the commitment rates for foreign- and native-born whites are approximately the same (tables 3 and 4).

5. The variation of age distribution of inmates in different States is relatively slight, showing only a small interrelation between the age of delinquent and nondelinquent population. The commitment rates for the 1,000 inmates increase progressively with the size of community from which the inmates are derived. The interrelation between size of community and crime rate is less perfect in New York State commitments.

6. The low median, the small interquartile range, and the marked asymmetry characteristic of the age distribution of inmates are still more pronounced among recidivists (tables 5, 6, 7, 8, and 9). The greater deficiency of older offenders among recidivists is an indication that younger offenders more often become repeaters.

7. The characteristics of a low median age, a small interquartile range, and asymmetry are most pronounced in crimes that are more violent and direct (tables 10 and 11).

8. The incidence of crime varies widely in different occupations. The age distribution of inmates, while varying considerably for different occupational groups, is not altered significantly when the occupational differences are eliminated by standardization. There is definite relation between certain occupations and specific crimes.

CONCLUSION

At the beginning of this paper it was suggested that age may have an etiological significance in crime. We have seen that the age of criminals shows with considerable consistency certain characteristics pointed out in the first section. Throughout the subsequent sections these characteristics have been shown to reappear irrespective of race, nativity, residence, occupation, or type of crime for which convicted. In fact it has been shown definitely that these characteristics are most pronounced in more violent and direct crimes and in general less so in crimes of a technical nature. It has also been shown that these same characteristics are more pronounced among recidivists than among first offenders.

In the opinion of the writer, physiological immaturity, legal exemption of minors, and social leniency toward younger offenders account largely for the lower commitment rates of persons in their early teens. But these factors cannot account for the sharp increase of commitments after the early teens, or the rapid decrease of commitment rates after age 30. The hypothesis which seems to account best for the type of disparity found in the commitment rates at different ages, and the distributional characteristics resulting, is that emotional instability

is largely responsible for the greater commitment rate of youthful offenders, and as individuals mature they tend to become emotionally more stable. If this assumption is correct, patient experimental study of temperamental traits of delinquents and nondelinquents may enable the quantitative determination of emotional maturity and stability in different individuals, increasing our knowledge of the etiology of crime and adding to our ability in selecting good risks for parole and other forms of conditional release.

THE INFLUENCE OF TRYPAN BLUE UPON THE RESISTANCE OF MICE TO TRANSPLANTABLE AND INDUCED TUMORS

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It is known that vital staining with certain dyes lowers the resistance of mice to the growth of transplantable tumors. Ludford (1, 2, 3) has shown that subcutaneous injection of the acid dyes trypan blue and vital new red, as well as intravenous injection of inorganic colloids, produces this result. In his experiments, vital staining lowered all three types of resistance; namely, natural resistance, resistance induced by the subcutaneous injection of embryonic tissues, and, finally, concomitant immunity, or resistance induced by growth of a transplantable tumor within the tissues of the animal. Similar results were obtained in this laboratory (4), following vital staining with trypan blue. It has been found that subcutaneous injection of trypan blue inhibits the production of concomitant immunity and also destroys an acquired resistance to mouse sarcoma 180.

The first part of this paper deals with the results of experiments in which efforts were made to determine whether vital staining with trypan blue lowered the resistance of pure-strain mice to such an extent that they could grow, in serial passage, a tumor arising spontaneously within a member of another pure strain. As a rule, a spontaneous tumor arising within a member of a pure strain of mice will grow in all members of the same strain, but not in members of other pure strains. This has been the experience in this laboratory. Cloudman (5, 6, 7), however, has found tumors arising within strain A mice which grew in a high percentage of strain D animals and also in members of several other inbred lines. One of these tumors (7) also grew progressively in a few individuals of an alien mammalian species. Other exceptions to the genetic theory of transplantation are recorded by Bittner (8) in his recent review of genetic studies concerning inoculable tumors. Apparently no attempts have been made to determine whether these "exceptional" tumors could undergo serial transmisson through alien inbred lines of mice.

The second part of the present paper deals with the results attending two experiments in which attempts were made to ascertain whether vital staining with trypan blue lowered the resistance of mice to the carcinogenic activity of 1:2:5:6-dibenzanthracene. Burrows, Hieger, and Kennaway (9) have shown that a solution of dibenzanthracene in lard, when injected subcutaneously, induces sarcomas in mice. This finding has been confirmed in this laboratory (10, 11) by using both pure-strain mice and the ordinary stock or "market" mice.

Since previous investigations with trypan blue had been performed with transplantable tumors only, observations were made to determine whether the dye also lowered the resistance of mice to the growth of "induced" tumors produced by dibenzanthracene.

EXPERIMENTAL ANIMALS

All pure-strain mice were purchased from the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. Mice of strain A, strain D, and strain C_3H were used. These strains are described as follows:

Strain D: Inbred since 1909. Dilute brown in color.
Strain A: Inbred since 1918. Albino in color.
Strain C_3H: Inbred since 1921. Color of wild house mice.

All three strains have a high incidence of spontaneous tumors in breeding females. The pure-strain animals were used only for transplantation experiments.

Only albino mice purchased from a local dealer, and therefore not pure strain, were used in experiments for testing the effect of vital staining upon their reaction to the carcinogenic activity of dibenzanthracene. These animals are referred to as stock mice throughout this paper. All mice were less than 1 year of age and weighed about 20 grams.

TECHNIQUE

All trypan blue injections were made subcutaneously in the back with a sterile 0.5 percent solution of trypan blue (Grübler) in distilled water. The amounts injected are stated in the protocols of the individual experiments.

A solution of 1:2:5:6-dibenzanthracene in lard was prepared by filtering the lard at 38° C. and adding dibenzanthracene in the proportion of 4 mg to each cubic centimeter of lard. The lard was then heated to 140° C., at which temperature the compound dissolved completely. The solution was kept in the cold until used, when it was heated to about 40° C. All injections of the lard-dibenzanthracene solution were made subcutaneously in the right axillary region.

The customary trocar technique was used for all tumor inoculations. All implants were made subcutaneously in the right groin.

EXPERIMENTAL OBSERVATIONS

THE INFLUENCE OF TRYPAN BLUE UPON THE RESISTANCE OF PURE-STRAIN MICE TO A TUMOR ARISING WITHIN ANOTHER STRAIN

Trypan blue lowered the natural resistance of pure-strain mice. It was found that tumors arising within strain A and strain C_3H mice grew progressively and underwent serial passage in vitally stained strain D animals. The results of three experiments dealing with this phase of the investigation are presented in charts 1, 2, and 3. The charts show the results obtained with both the experimental strain D mice and necessary control mice of the same or other strains. Each perpendicular line represents an attempt at tumor passage. These lines are broken to show the time of inoculation and the size (in millimeters) of the tumor used for inoculation. The number and strain of both the experimental and control mice used for each passage are shown beneath the horizontal lines. The results in each group of mice are placed just below the information showing the strain and number of animals used. When growth occurred, a note is made of the time of death and, if of interest, the size (in millimeters) of the tumor in the last mouse dying as the result of tumor growth. Only those animals showing progressive tumor growth are marked as "+" in the charts. Mice that remained completely negative or had small nodules which receded are marked "—" in the charts.

It is seen that tumor passage was carried on through strain D mice only. These animals were given trypan blue injections as follows:

0.5 cc 6 days prior to inoculation;
0.5 cc 4 days prior to inoculation;
0.5 cc 2 days prior to inoculation;
0.5 cc at weekly intervals for 2 months after inoculation.

In experiment 1 (chart 1), an adenocarcinoma of the mammary gland arising spontaneously within a strain C_3H mouse was first passed to four normal C_3H animals on April 17, 1934. As usual, all these mice grew the tumor. One of these tumors was used to inoculate four normal strain D mice, four normal C_3H mice, and seven strain D mice that had received injections of trypan blue. The tumor grew progressively in six of the vitally stained strain D mice, in none of the normal strain D mice, and in all the strain C_3H animals. On June 21, 1934, a tumor (18 by 10 mm) from a vitally stained mouse was used for passage to other normal strain D and strain C_3H mice, as well as vitally stained strain D animals.

It is seen that the C_3H tumor underwent four passages in vitally stained strain D mice. After three passages through stained strain D animals, the tumor retained its ability to grow in all animals of strain C_3H. After the first passage through stained strain D mice, it grew in one of four normal strain D mice. This tumor failed to

grow when passed to other normal strain D animals on August 14, 1934. The tumor also grew in another normal strain D mouse after the third passage through stained mice. It grew progressively and killed the animal on November 13, 1934.

In experiment 2 a carcinoma of the mammary gland arising spontaneously within a strain A mouse was passed to vitally stained strain D mice without previous passage through strain A animals. As shown in chart 2, the tumor grew successfully through two passages of stained D mice. The vitally stained mice of the attempted third passage died before the tumor became established, and so a strain A control of the same passage served as the source of tumor material for the next passage. The tumor grew through two more passages of stained strain D mice. It retained its ability to grow in strain A mice throughout the course of the experiment. Two tumors developed in normal strain D mice, but transplants from these failed to grow in other normal strain D animals.

In experiment 3 a spindle-cell sarcoma induced by subcutaneous injection of dibenzanthracene in a strain C_3H mouse had undergone eight passages through strain C_3H mice. Because this tumor possesses remarkable growth energy in strain C_3H mice, it was hoped that passage through vitally stained strain D mice might enhance its growth energy so that it could grow, in serial passage, through normal strain D mice. As shown in chart 3, the tumor grew through three generations of vitally stained strain D animals. While it grew progressively in four normal strain D mice, three of these tumors failed to establish themselves when implanted into other normal strain D mice.

The results of these three experiments in which three different tumors were used show that vital staining of strain D mice lowers their resistance so as to permit serial passage of tumors arising within the other strains of mice. There is also some evidence that the alien tumor growing in stained strain D mice became adapted to strain D animals, since, in some instances, transplants from a tumor in a stained mouse grew in normal D strain mice. However, all attempts at further passage of these tumors through normal strain D mice were unsuccessful.

THE INFLUENCE OF TRYPAN BLUE UPON THE RESISTANCE OF MICE TO THE CARCINOGENIC ACTION OF 1:2:5:6-DIBENZANTHRACENE

As stated previously, it was desirable to know whether vital staining with trypan blue lowered the resistance of mice to the development of "induced" tumors as well as to the growth of transplantable tumors. The results of two experiments dealing with this phase of the investigation are presented in this report.

Experiment 4.—Seventy female stock mice were used in this investigation. Each of these animals received two injections of 0.25 cc of the dibenzanthracene-lard solution—the first on May 7, 1934, and the second on May 15, 1934. Thirty of these mice were then kept as normal controls. Each of the remaining 40 received injections of trypan blue as follows: 0.3 cc on May 2, May 4, May 11, and May 18, followed by 9 injections of 0.5 cc at approximately weekly intervals until August 8, 1934. Thus, each mouse received 13 injections totaling 5.7 cc of the trypan blue solution. The first tumors appeared on August 15, 1934, just 100 days after the initial injection of the dibenzanthracene-lard solution. At that time 36 of the vitally stained mice and 29 of the normal mice were living. The animals were examined each week up to December 5, 1934, when the experiment was discontinued. At that time two of the trypan blue mice and eight of the normal mice were alive and tumor free. The results of the experiment are summarized in table 1.

It is seen that, at the end of the 19th week, 16 of the stained mice and only 2 of the normal mice had developed tumors. The experiment indicates that injections of trypan blue lowered the resistance of the mice so that they developed sarcoma earlier than did the normal animals.

TABLE 1.—*Experiment 4: Appearance of dibenzanthracene tumors in vitally stained and normal mice*

Time, in weeks, after dibenzanthracene-lard injection that tumors appeared			14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
	Number of mice injected, May 7, 1934	Number living Aug. 15, 1934	Number of tumors																	Total number of tumors	Percent tumors as of Aug. 15, 1934	Number dying of other causes	Number living Dec. 5, 1934
Trypan blue	40	36	2	3	5	1	3	2	2	1	3	2	3	--	1	2	1	--	1	32	89	6	2
Normal	30	29	1	--	--	--	1	--	3	1	3	--	3	--	3	2	1	--	2	20	68	2	8

Experiment 5.—In this experiment an effort was made to confirm and extend the results of experiment 4. Ninety-eight female stock mice were used in the experiment. Each mouse received two injections of 0.25 cc of the dibenzanthracene-lard solution—the first on November 22, 1934, and the second on November 26, 1934. The mice were divided into three groups—two groups for vital staining and one group for controls. The first group (group A) received small amounts (0.1 cc) of trypan blue. Since relatively large injections of the dye lowered the resistance of mice in experiment 4, it was thought that perhaps the smaller injections might increase their resistance. The second group (group B) represented an attempted repetition of

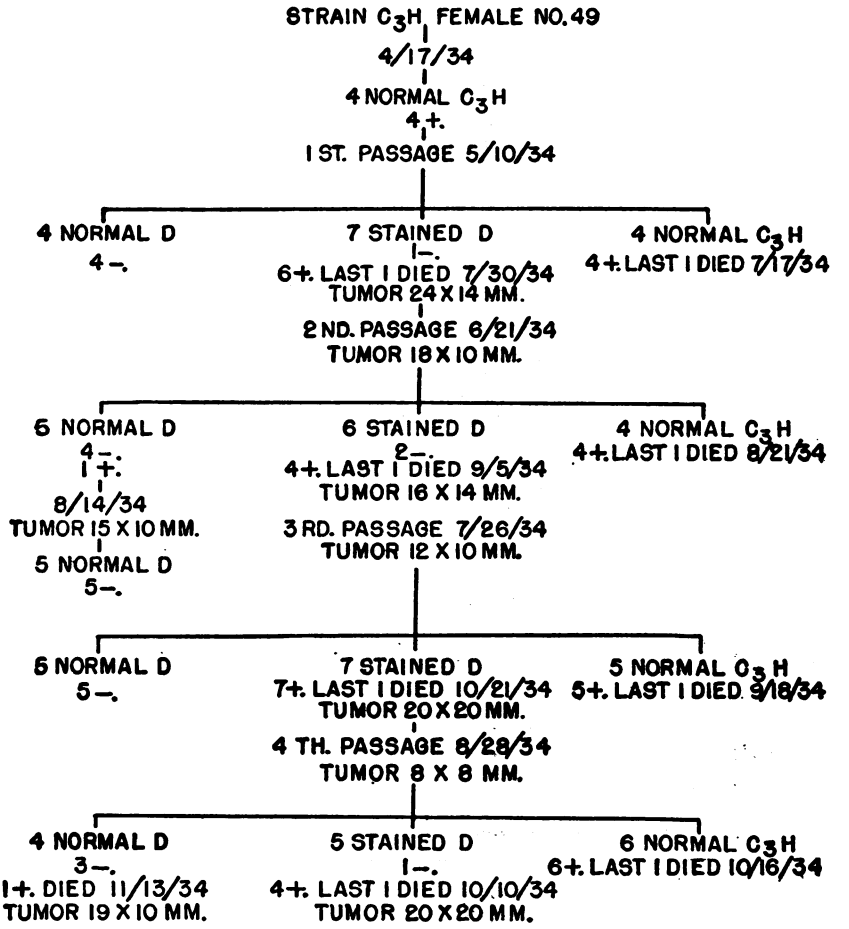

CHART 1.

Experiment 1.—Showing serial passage of a strain C_3H adenocarcinoma through vitally stained strain D mice.

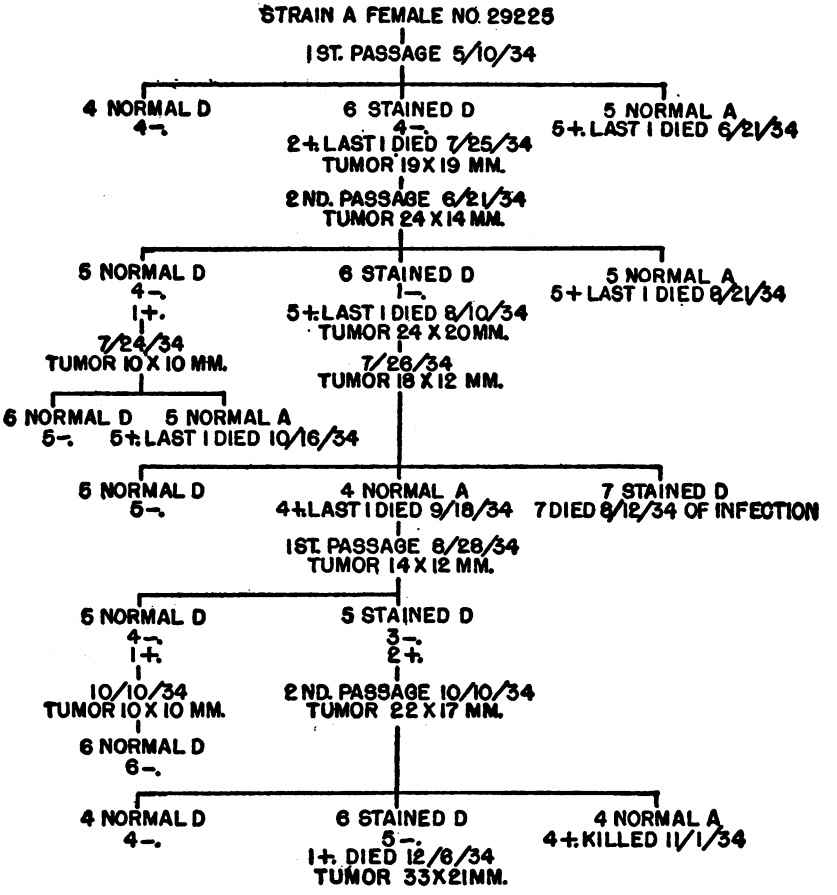

CHART 2.

Experiment 2.—Showing serial passage of a strain A carcinoma through vitally stained strain D mice.

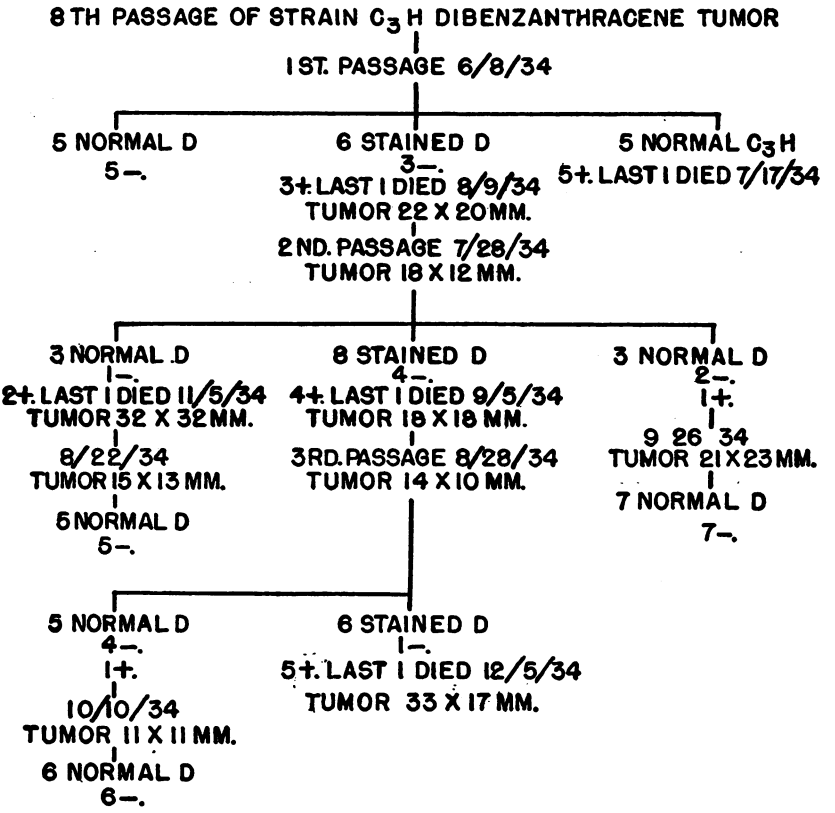

CHART 3.

Experiment 3.—Showing serial passage of a strain C_3H sarcoma through vitally stained strain D mice.

vitally stained mice of experiment 4, in that they received larger amounts of the dye. The third group (group C) served as controls to group B by receiving subcutaneous injections of sterile distilled water in amounts equal to the trypan blue injections of group B. The time and amount of injections are summarized briefly as follows:

Group A.—Each received 0.1 cc of trypan blue solution on November 16 and November 27 and then a series of 0.1-cc injections at approximately weekly intervals until January 26, 1934. Each animal received a total of 0.8 cc of the trypan blue solution.

Group B.—Each received 0.3 cc of trypan blue on November 16, November 19, and November 27 and then a series of 0.5-cc injections at approximately weekly intervals until January 26, 1934. Thus, each of these mice received a total of 3.9 cc of the trypan blue solution. The injections were stopped because of the poor condition of the mice in this group. It will be noted that these mice received 1.8 cc less of the trypan blue solution than did the stained mice of experiment 4.

Group C.—These animals received injections of distilled water at the same time and in amounts equal to the trypan blue injections to group B mice. Mice treated in this way were considered to be better controls than the uninjected normals of experiment 4.

TABLE 2.—*Experiment 5: Appearance of dibenzanthracene tumors in vitally stained and control mice*

Time, in weeks, after dibenzanthracene-lard injection that tumors appeared			17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34				
Group	Number injected Nov. 22, 1934	Number living Mar. 26, 1935	Number of tumors																		Total number of tumors	Percent tumors as of Mar. 26, 1935	Number dying of other causes	Number living Aug. 1, 1935
A	36	29	1	1	2	2	--	3	2	2	2	--	--	1	--	2	--	1	--	2	21	72	6	2
B	32	17	--	1	1	4	1	--	1	5	--	1	1	1	--	1	--	--	--	--	17	100	0	0
C	30	27	--	--	1	--	1	--	1	7	2	3	2	1	--	--	--	2	--	--	20	74	1	6

The first tumor appeared on March 26, 1935, 124 days after the first injection of the dibenzanthracene-lard solution. At this time, 29 of the group A mice, 17 of group B mice, and 27 of group C mice were alive, and all were in good condition. The results of the experiment are shown in table 2.

It is seen that the findings in experiment 4 were confirmed. Of the first 22 tumors to appear, only 3 were in the control animals. However, seven tumors appeared in the controls during the twenty-fourth week of the experiment. If this week is included, it is found that of the first 36 tumors, 10 were in the control mice. By comparing the results in group B and group C it is seen that, at the end of the

twenty-fourth week, 13, or 82 percent, of the vitally stained mice and 10, or 47 percent, of the controls had developed tumors. There is evidence also that the smaller amounts of trypan blue given to mice of group A lowered rather than increased their resistance.

CONCLUSION

Vital staining by subcutaneous injection of trypan blue lowers the resistance of mice to such an extent that—

(1) Tumors arising within mice of strain A or strain C_3H grew progressively and underwent serial passage through vitally stained strain D mice;

(2) Tumors induced by subcutaneous injection of dibenzanthracene appeared earlier in vitally stained stock mice than in control animals.

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DEATHS DURING WEEK ENDED APRIL 18, 1936

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Apr. 18, 1936	Corresponding week, 1935
Data from 86 large cities of the United States.		
Total deaths	9,422	8,845
Deaths per 1,000 population, annual basis	13.2	12.3
Deaths under 1 year of age	556	611
Deaths under 1 year of age per 1,000 estimated live births	50	56
Deaths per 1,000 population, annual basis, first 16 weeks of year	13.6	12.6
Data from industrial insurance companies:		
Policies in force	68,409,589	67,781,169
Number of death claims	13,836	12,189
Death claims per 1,000 policies in force, annual rate	10.6	9.4
Death claims per 1,000 policies, first 16 weeks of year, annual rate	10.9	10.7

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended Apr. 25, 1936, and Apr. 27, 1935

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 25, 1936, and Apr. 27, 1935

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935
New England States:								
Maine			69	1	72	223	1	0
New Hampshire		1			44	3	0	0
Vermont					496	47	0	0
Massachusetts	6	5			1,400	495	4	3
Rhode Island					72	415	1	2
Connecticut	1	2	4	8	109	1,263	1	0
Middle Atlantic States:								
New York	49	23	[1] 15	[1] 5	3,454	2,927	22	26
New Jersey	15	17	19	17	360	2,140	15	3
Pennsylvania	34	67			1,014	5,634	9	5
East North Central States:								
Ohio	17	56	36	91	209	2,652	11	27
Indiana	5	8	76	21	21	403	3	4
Illinois	35	66	66	69	30	2,628	22	19
Michigan	1	11	6	2	102	5,698	3	4
Wisconsin	1	2	40	36	81	1,736	5	2
West North Central States:								
Minnesota		6			382	676	0	0
Iowa	7	9	7	4	1	275	1	3
Missouri	17	31	465	56	32	668	4	11
North Dakota		5	7	16	0	40	0	0
South Dakota					5	45	0	1
Nebraska	10	4			13	370	1	1
Kansas	11	7	47	12	16	1,209	1	1
South Atlantic States:								
Delaware				3	17	11	0	0
Maryland [2]	6	3	11	9	330	85	18	9
District of Columbia	13	9	2	1	121	56	4	4
Virginia	12	16	235		112	584	11	5
West Virginia	9	11	90	54	76	393	13	1
North Carolina	20	13	28	8	44	192	2	2
South Carolina	3	2	264	129	44	24	2	0
Georgia [3]	9	3	170				3	0
Florida	6	4	31	2	18	74	5	0
East South Central States:								
Kentucky	9	10	278	4	310	468	62	10
Tennessee	12	11	395	59	90	23	7	6
Alabama [3]	18	15	333	58	5	541	3	6
Mississippi [3]	5	8					1	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 25, 1936, and Apr. 27, 1935—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935
West South Central States:								
Arkansas	10	2	352	13	-------	42	2	0
Louisiana	8	23	99	7	49	58	0	0
Oklahoma [4]	8	10	490	60	22	115	5	2
Texas [3]	43	31	481	97	246	214	9	0
Mountain States:								
Montana [5]	3	2	21	23	17	426	2	2
Idaho [5]	1	-------	-------	-------	63	11	0	1
Wyoming [5]	-------	1	1	-------	3	79	1	0
Colorado	4	7	-------	-------	38	536	0	0
New Mexico	2	4	6	1	42	32	1	0
Arizona	2	2	119	14	134	34	2	1
Utah [2]	1	-------	-------	-------	16	2	0	0
Pacific States:								
Washington	-------	3	2	-------	327	550	0	4
Oregon [5]	3	5	59	28	225	310	0	1
California	26	29	74	42	2,841	1,606	10	8
Total	442	544	4,398	950	13,103	36,013	267	174
First 17 weeks of year	9,759	11,529	126,688	97,129	154,697	456,754	4,076	2,312

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935
New England States:								
Maine	0	1	9	11	0	0	0	2
New Hampshire	0	0	7	13	0	0	2	0
Vermont	0	0	7	14	0	0	1	0
Massachusetts	0	1	252	246	0	0	0	2
Rhode Island	0	0	33	13	0	0	0	0
Connecticut	0	0	57	76	0	0	3	0
Middle Atlantic States:								
New York	0	1	834	1,063	0	0	9	3
New Jersey	0	2	354	210	0	0	3	5
Pennsylvania	2	1	539	781	0	0	21	9
East North Central States:								
Ohio	1	0	281	823	0	0	10	5
Indiana	0	0	219	125	0	3	0	1
Illinois	0	1	823	1,343	3	0	4	8
Michigan	0	2	252	331	1	0	3	1
Wisconsin	0	0	507	381	5	24	1	1
West North Central States:								
Minnesota	0	0	307	424	5	2	0	0
Iowa	0	0	254	116	40	1	0	2
Missouri	0	2	253	60	15	2	1	7
North Dakota	0	0	45	84	12	0	1	2
South Dakota	0	0	49	19	28	1	0	0
Nebraska	0	0	122	83	22	35	0	1
Kansas	0	2	468	81	23	9	0	2
South Atlantic States:								
Delaware	0	0	3	10	0	0	0	0
Maryland [2]	0	0	76	111	0	0	0	6
District of Columbia	0	0	18	64	0	0	0	1
Virginia	0	0	68	39	0	0	5	0
West Virginia	1	0	41	59	0	0	3	4
North Carolina	1	3	28	20	0	1	1	0
South Carolina	0	0	2	2	0	0	1	0
Georgia [2]	0	0	10	1	0	1	3	7
Florida	0	0	5	3	0	0	2	1
East South Central States:								
Kentucky	0	0	47	39	0	0	4	14
Tennessee	0	0	27	24	0	1	2	2
Alabama [2]	1	2	5	5	0	0	4	5
Mississippi [2]	0	0	2	3	0	0	0	3

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 25, 1936, and Apr. 27, 1935—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935	Week ended Apr. 25, 1936	Week ended Apr. 27, 1935
West South Central States:								
Arkansas	1	0	8	-------	1	0	1	0
Louisiana	0	1	5	11	1	2	1	15
Oklahoma [4]	0	0	52	13	0	0	4	2
Texas [3]	0	0	39	38	0	0	4	30
Mountain States:								
Montana [5]	0	0	99	6	7	19	0	1
Idaho [5]	0	0	48	4	1	0	0	0
Wyoming [5]	0	0	34	11	6	4	0	0
Colorado	0	0	102	176	0	2	0	0
New Mexico	0	0	59	24	0	3	3	0
Arizona	0	1	28	67	0	0	0	4
Utah [2]	0	0	66	153	2	0	0	0
Pacific States:								
Washington	0	0	90	49	10	32	2	2
Oregon [2]	0	0	37	43	53	4	4	0
California	3	3	311	151	0	4	14	5
Total	10	23	6,982	7,423	235	150	117	153
First 17 weeks of year	305	409	131,239	122,471	3,898	3,218	1,884	2,256

[1] New York City only.
[2] Week ended earlier than Saturday.
[3] Typhus fever, week ended Apr. 25, 1936, 11 cases, as follows: Georgia, 5; Alabama, 4; Texas, 2.
[4] Exclusive of Oklahoma City and Tulsa.
[5] Rocky Mountain spotted fever, week ended Apr. 25, 1936, 9 cases, as follows: Montana, 4; Idaho, 1; Wyoming, 2; Oregon, 2.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
March 1936										
Alabama	11	43	8,330	116	126	19	2	56	3	4
Arizona	2	18	1,822	2	447	1	1	133	1	4
Georgia	43	48	3,981	59	26	14	0	85	2	5
Hawaii Territory	3	4	190	[1] 2	23	-------	0	1	0	5
Idaho	4	4	74	-------	244	-------	0	362	16	-------
Illinois	76	149	202	13	212	2	5	4,095	64	26
Kansas	8	61	425	-------	45	1	2	1,366	229	2
Louisiana	6	60	1,018	86	323	1	1	65	10	23
Mississippi	10	24	29,286	2,589	773	193	1	43	1	3
Missouri	34	101	4,819	30	134	1	2	981	50	5
Nevada	-------	-------	38	-------	38	-------	0	68	0	0
New York	123	144	-------	4	11,493	-------	4	5,351	0	45
North Dakota	4	3	18	-------	12	-------	1	259	9	0
Oklahoma [2]	39	49	1,186	45	32	13	0	111	12	10
Oregon	5	8	733	2	1,177	2	-------	166	8	7
Rhode Island	7	1	4	-------	294	-------	0	142	0	-------
South Dakota	1	8	18	-------	15	-------	0	270	110	-------
Texas	45	181	3,161	1,538	2,085	41	5	313	16	11
Vermont	-------	2	-------	-------	2,844	-------	0	86	0	0
Virginia	71	58	6,115	5	649	7	1	232	0	12
Washington	12	6	235	-------	1,349	-------	3	490	46	6
Wisconsin	4	7	267	-------	411	-------	3	2,442	41	3

[1] 2 cases of malaria imported by ship.
[2] Exclusive of Oklahoma City and Tulsa.

March 1936

	Cases
Actinomycosis:	
Illinois	1
Anthrax:	
Louisiana	1
New York	1
Texas	3
Chicken pox:	
Alabama	208
Arizona	129
Georgia	120
Hawaii Territory	42
Idaho	32
Illinois	2,193
Kansas	690
Louisiana	122
Mississippi	526
Missouri	313
Nevada	9
New York	2,697
North Dakota	36
Oklahoma [1]	87
Oregon	234
Rhode Island	76
South Dakota	87
Texas	495
Vermont	100
Virginia	219
Washington	465
Wisconsin	1,638
Conjunctivitis:	
Georgia	2
Washington	4
Dengue:	
Georgia	16
Mississippi	8
Texas	1
Dysentery:	
Arizona	20
Georgia (amoebic)	6
Illinois (amoebic)	7
Illinois (amoebic carriers)	32
Illinois (bacillary)	5
Louisiana (amoebic)	2
Mississippi (amoebic)	46
Mississippi (bacillary)	234
Missouri	4
New York (amoebic)	4
New York (bacillary)	11
Oklahoma [1]	3
Texas (bacillary)	3
Virginia (amoebic)	2
Virginia (diarrhea included)	33
Washington (amoebic)	1
Epidemic encephalitis:	
Alabama	2
Georgia	1
Illinois	6
Kansas	1
Louisiana	1
New York	21
Texas	1
Virginia	4
Washington	3
Wisconsin	1
German measles:	
Alabama	6
Arizona	119
Illinois	58
Kansas	22
New York	1,245
Rhode Island	321
Vermont	169
Washington	393
Wisconsin	150
Hookworm disease:	
Georgia	1,044
Louisiana	11
Mississippi	231

March 1936—Continued

	Cases
Impetigo contagiosa:	
Kansas	1
Oklahoma [1]	2
Oregon	53
Washington	1
Lead poisoning:	
Illinois	2
Leprosy:	
Hawaii Territory	5
Louisiana	1
Mumps:	
Alabama	347
Arizona	269
Georgia	325
Hawaii Territory	11
Idaho	205
Illinois	1,602
Kansas	497
Louisiana	33
Mississippi	1,766
Missouri	1,280
Nevada	14
North Dakota	158
Oklahoma [1]	64
Oregon	107
Rhode Island	115
South Dakota	90
Texas	2,132
Vermont	200
Virginia	369
Washington	361
Wisconsin	4,661
Ophthalmia neonatorum:	
Alabama	3
Illinois	7
Missouri	1
New York [2]	13
South Dakota	1
Paratyphoid fever:	
New York	3
Oregon	1
Texas	2
Virginia	1
Puerperal septicemia:	
Mississippi	30
Washington	1
Rabies in animals:	
Alabama	89
Illinois	30
Louisiana	28
Mississippi	13
Missouri	8
New York	7
Oregon	4
Washington	10
Rabies in man:	
Illinois	1
Oklahoma [1]	2
Rocky Mountain spotted fever:	
Nevada	1
Oregon	1
Scabies:	
Arizona	1
Kansas	1
Oklahoma [1]	6
Oregon	55
Septic sore throat:	
Georgia	82
Idaho	21
Illinois	12
Kansas	7
Louisiana	17
Missouri	72
New York	89
Oklahoma [1]	18
Oregon	3
Rhode Island	6
South Dakota	2
Vermont	1
Washington	7
Wisconsin	12

March 1936—Continued

	Cases
Tetanus:	
Alabama	4
Kansas	2
Louisiana	7
Missouri	1
New York	2
Oklahoma [1]	1
Virginia	1
Trachoma:	
Arizona	35
Illinois	131
Louisiana	1
Mississippi	6
Missouri	32
North Dakota	2
Oklahoma [1]	2
South Dakota	4
Washington	27
Trichinosis:	
New York	18
South Dakota	2
Tularemia:	
Georgia	4
Illinois	3
Louisiana	4
Missouri	1
New York	2
Virginia	1
Typhus fever:	
Alabama	7
Georgia	17
Hawaii Territory	6
New York	1
Rhode Island	1
Texas	14
Undulant fever:	
Arizona	1
Georgia	6
Illinois	7
Kansas	3
Louisiana	1
Mississippi	5
New York	13
North Dakota	1
Oklahoma [1]	1
Rhode Island	1
Texas	4
Vermont	1
Washington	6
Wisconsin	6
Vincent's infection:	
Illinois	27
Kansas	33
New York [2]	92
North Dakota	7
Oklahoma [1]	1
Oregon	12
Whooping cough:	
Alabama	53
Arizona	93
Georgia	54
Hawaii Territory	25
Idaho	2
Illinois	1,417
Kansas	120
Louisiana	229
Mississippi	445
Missouri	91
New York	1,127
North Dakota	11
Oklahoma [1]	23
Oregon	36
Rhode Island	16
South Dakota	17
Texas	153
Vermont	85
Virginia	180
Washington	128
Wisconsin	624

[1] Exclusive of Oklahoma City and Tulsa.

[2] Exclusive of New York City.

WEEKLY REPORTS FROM CITIES

City reports for week ended Apr. 18, 1936

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	------	0	1	2	5	0	0	0	6	22
New Hampshire:											
Concord	0	------	0	0	0	1	0	0	0	0	9
Manchester	0	------	0	0	2	5	0	0	0	0	17
Nashua	0	------	--------	9	-------	0	0	-------	0	0	--------
Vermont:											
Barre	-------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Burlington	0	------	0	83	-------	1	0	0	0	2	9
Rutland	0	------	0	91	0	0	0	0	0	0	7
Massachusetts:											
Boston	0	------	0	494	33	74	0	13	0	26	210
Fall River	0	------	0	4	4	22	0	0	0	0	31
Springfield	0	------	0	1	2	4	0	0	0	7	43
Worcester	0	------	0	10	5	11	0	0	0	9	--------
Rhode Island:											
Pawtucket	-------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Providence	1	------	0	25	7	13	0	4	0	1	74
Connecticut:											
Bridgeport	1	------	0	3	2	5	0	1	0	5	36
Hartford	0	------	0	0	1	5	0	3	0	0	43
New Haven	0	1	0	0	1	4	0	0	0	53	44
New York:											
Buffalo	1	------	2	40	15	36	0	11	0	3	167
New York	38	13	6	1,857	144	448	0	94	2	68	1,540
Rochester	0	------	1	1	6	3	0	0	1	0	67
Syracuse	0	------	0	55	11	11	0	1	0	6	66
New Jersey:											
Camden	0	1	0	4	4	7	0	2	0	2	39
Newark	0	10	0	5	13	101	0	5	0	13	109
Trenton	0	------	0	1	2	2	0	0	0	0	41
Pennsylvania:											
Philadelphia	9	7	2	587	54	88	0	25	1	73	579
Pittsburgh	3	6	3	14	28	92	0	7	1	12	179
Reading	0	------	0	3	3	2	0	0	0	1	30
Scranton	1	------	--------	0	-------	2	0	-------	0	0	--------
Ohio:											
Cincinnati	2	------	4	19	13	18	0	5	0	1	127
Cleveland	3	40	6	61	30	61	0	8	0	61	243
Columbus	1	2	2	2	11	9	0	6	0	3	99
Toledo	0	2	2	48	10	8	0	8	1	21	77
Indiana:											
Anderson	0	------	0	0	2	12	0	1	0	9	11
Fort Wayne	0	------	1	0	4	10	0	0	0	0	31
Indianapolis	0	------	0	7	31	83	0	6	0	20	120
South Bend	0	------	2	0	3	2	0	0	0	3	20
Terre Haute	0	------	0	1	0	4	0	0	0	0	18
Illinois:											
Alton	0	------	0	0	3	1	0	0	0	0	19
Chicago	14	16	8	15	72	211	0	48	2	158	810
Elgin	0	------	0	0	1	5	0	0	0	0	19
Moline	0	------	0	0	2	4	0	0	0	0	12
Springfield	0	------	0	0	6	15	0	0	0	1	38
Michigan:											
Detroit	4	6	5	31	45	108	1	8	0	130	321
Flint	0	------	0	2	8	16	0	1	0	8	35
Grand Rapids	0	------	0	3	6	10	0	2	0	5	32
Wisconsin:											
Kenosha	0	------	0	1	0	16	0	0	0	1	4
Madison	0	------	0	0	2	5	0	2	0	10	40
Milwaukee	0	------	0	6	5	60	0	1	0	84	108
Racine	1	------	0	0	0	12	0	0	0	3	25
Superior	0	------	0	1	0	14	0	0	0	0	8
Minnesota:											
Duluth	0	------	0	0	2	7	0	2	1	15	17
Minneapolis	0	------	0	281	3	104	0	3	0	26	115
St. Paul	0	------	0	149	12	40	0	4	0	2	75

City reports for week ended Apr. 18, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0	------	--------	0	-------	4	0	-------	0	4	--------
Davenport	1	------	--------	0	-------	19	0	-------	0	0	--------
Des Moines	1	------	--------	0	-------	9	0	-------	0	0	44
Sioux City	0	------	--------	0	-------	9	34	-------	0	1	--------
Waterloo	0	------	--------	0	-------	9	0	-------	0	0	--------
Missouri:											
Kansas City	1	------	0	3	21	72	0	4	0	1	125
St. Joseph	2	------	0	0	8	4	0	1	0	0	38
St. Louis	13	------	11	1	23	58	0	8	0	8	276
North Dakota:											
Fargo	0	------	0	0	0	7	0	0	0	0	14
Grand Forks	1	------	--------	0	-------	0	0	-------	0	0	--------
Minot	0	------	0	0	0	3	0	0	0	0	5
South Dakota:											
Aberdeen	0	------	--------	1	-------	1	0	-------	0	0	--------
Sioux Falls	0	------	0	0	0	3	4	0	0	0	8
Nebraska:											
Omaha	3	------	1	5	9	60	8	1	0	0	55
Kansas:											
Lawrence	0	2	0	0	4	5	0	1	0	0	9
Topeka	--------	------	--------	--------	--------	--------	--------	--------	--------	--------	--------
Wichita	0	------	0	1	7	28	0	1	0	2	37
Delaware:											
Wilmington	0	------	0	1	4	0	0	0	0	4	22
Maryland:											
Baltimore	2	11	3	139	33	28	0	20	0	31	296
Cumberland	1	------	0	0	0	0	0	0	0	0	9
Frederick	0	------	0	0	1	0	0	0	0	0	2
District of Col.:											
Washington	13	2	2	96	19	16	0	14	0	12	192
Virginia:											
Lynchburg	1	------	1	1	0	0	0	0	0	19	14
Norfolk	1	------	0	1	3	0	0	0	0	2	31
Richmond	0	------	1	3	2	23	0	1	0	0	53
Roanoke	1	------	0	0	2	0	0	0	0	0	28
West Virginia:											
Charleston	0	3	1	0	1	2	0	2	0	0	26
Huntington	0	------	0	1	0	1	0	0	0	0	--------
Wheeling	0	------	0	20	3	0	0	0	0	0	20
North Carolina:											
Gastonia	0	------	0	0	1	0	0	0	0	0	9
Raleigh	0	------	0	0	4	0	0	0	0	2	17
Wilmington	0	------	0	0	2	0	0	0	0	0	11
Winston-Salem	0	1	1	23	1	3	0	1	0	0	11
South Carolina:											
Charleston	0	14	1	0	2	1	0	1	0	2	25
Columbia	--------	------	--------	--------	--------	--------	--------	--------	--------	--------	--------
Florence	0	------	0	0	2	0	0	0	0	2	11
Greenville	0	------	0	14	0	0	0	0	0	1	3
Georgia;											
Atlanta	1	16	3	0	7	16	0	7	1	0	91
Brunswick	0	1	1	0	2	0	0	0	0	0	6
Savannah	1	5	1	0	0	0	0	2	0	0	32
Florida;											
Miami	1	17	2	10	1	4	0	1	0	11	31
Tampa	0	1	1	0	0	1	0	2	0	0	26
Kentucky;											
Ashland	3	------	--------	1	-------	0	0	-------	0	0	14
Covington	0	------	0	2	4	3	0	0	0	0	20
Lexington	0	------	0	15	4	0	0	2	0	4	24
Louisville	0	------	3	3	9	21	0	7	0	9	89
Tennessee;											
Knoxville	0	1	0	35	0	0	0	0	0	0	24
Memphis	1	------	0	1	13	8	0	6	0	14	106
Nashville	1	------	2	2	10	4	0	4	0	0	41
Alabama;											
Birmingham	3	14	2	0	9	0	0	3	1	0	75
Mobile	0	5	2	0	3	1	0	1	0	0	26
Montgomery	0	1	--------	1	-------	1	0	-------	0	0	--------
Arkansas;											
Fort Smith	0	------	--------	0	-------	1	0	-------	0	0	--------
Little Rock	0	50	0	0	8	0	0	1	0	0	9
Louisiana;											
Lake Charles	0	------	1	0	5	1	0	0	0	0	15
New Orleans	7	98	10	18	21	6	0	15	1	45	183
Shreveport	0	0	1	8	17	0	0	3	0	0	75

City reports for week ended Apr. 18, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Oklahoma:											
Oklahoma City	2	20	8	2	16	6	0	2	0	2	64
Texas:											
Dallas	6	14	12	30	15	7	0	2	0	3	96
Fort Worth	3	----	0	0	8	2	0	1	0	0	48
Galveston	0	----	0	1	8	0	0	1	0	0	24
Houston	7	----	4	2	11	1	0	2	0	0	95
San Antonio	4	----	3	13	9	1	0	7	0	1	69
Montana:											
Billings	1	----	0	0	1	8	0	0	0	1	14
Great Falls	1	----	0	0	6	3	0	0	0	1	10
Helena	0	----	----	0	0	0	6	0	0	0	4
Missoula	0	----	0	0	2	2	0	0	0	0	8
Idaho:											
Boise	0	----	0	10	2	1	0	0	0	0	8
Colorado:											
Colorado Springs	0	----	0	0	1	6	2	0	0	1	13
Denver	0	----	1	14	11	13	0	5	0	40	86
Pueblo	0	----	0	0	3	20	0	0	0	5	9
New Mexico:											
Albuquerque	0	----	2	1	1	12	0	2	0	0	11
Utah:											
Salt Lake City	0	----	3	29	0	41	2	3	0	4	39
Nevada:											
Reno	----	----	----	----	----	----	----	----	----	----	----
Washington:											
Seattle	0	----	0	207	8	19	5	6	0	15	102
Spokane	0	1	1	6	3	26	0	2	0	15	33
Tacoma	0	----	1	35	3	4	0	0	0	5	31
Oregon:											
Portland	0	4	2	53	4	10	0	5	1	6	102
Salem	0	5	----	8	----	1	0	----	0	0	----
California:											
Los Angeles	11	15	1	498	16	48	0	21	1	42	330
Sacramento	0	----	0	4	1	6	0	1	3	5	39
San Francisco	1	----	3	383	6	61	0	15	0	18	186

City reports for week ended Apr. 18, 1936—Continued

State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths	
Massachusetts:			
Boston	1	0	2
Worcester	1	0	0
New York:			
Buffalo	4	0	0
New York	15	5	0
New Jersey:			
Newark	1	0	0
Pennsylvania:			
Philadelphia	2	3	0
Pittsburgh	1	1	0
Ohio:			
Cincinnati	7	2	0
Columbus	1	1	0
Toledo	1	0	0
Indiana:			
Indianapolis	2	1	0
Illinois:			
Chicago	5	2	0
Springfield	2	3	0
Michigan:			
Detroit	1	2	0
Wisconsin:			
Milwaukee	1	0	0
Minnesota:			
Minneapolis	1	1	0
Iowa:			
Des Moines	1	0	0
Missouri:			
St. Joseph	0	0	1
St. Louis	3	0	0
Maryland:			
Baltimore	19	7	0
District of Columbia:			
Washington	5	3	0
Virginia:			
Lynchburg	1	0	0
Richmond	4	2	0
West Virginia:			
Wheeling	1	0	0
North Carolina:			
Wilmington	1	1	0
South Carolina:			
Charleston	4	1	0
Georgia:			
Atlanta	0	1	0
Savannah	1	0	0
Kentucky:			
Lexington	1	0	0
Louisville	1	2	0
Tennessee:			
Nashville	2	2	0
Alabama:			
Mobile	1	0	0
Louisiana:			
New Orleans	5	0	0
Shreveport	0	1	0
Oklahoma:			
Oklahoma City	1	0	0
Texas:			
Galveston	1	0	0
Houston	2	0	0
Colorado:			
Colorado Springs	0	1	0
New Mexico:			
Albuquerque	0	1	0
Utah:			
Salt Lake City	1	0	0
Washington:			
Seattle	1	0	0
Oregon:			
Portland	2	0	0
California:			
Los Angeles	3	2	3

Epidemic encephalitis.—Cases: Denver, 1.

Pellagra.—Cases: Toledo, 1; Washington, D. C., 1; Winston-Salem, 1; Charleston, S. C., 1; Atlanta, 1; Memphis, 1; Birmingham, 2; New Orleans, 1; Dallas, 1.

Typhus fever.—Cases: Savannah, 2.

FOREIGN AND INSULAR

HAITI

Anthrax.—Under date of April 20, 1936, an outbreak of anthrax was reported in the vicinity of Desdunes, Haiti, a small village on the west coast of the island between Gonaives and St. Marc.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for April 24, 1936, pages 522-534. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued May 29, 1936, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Plague

Ceylon—Weligama.—During the week ended April 11, 1936, 1 case of bubonic plague was reported at Weligama, Ceylon.

Hawaii Territory—Hawaii Island—Hamakua District—Pohakea Sector.—Two rats found April 15, 1936, in Pohakea Sector, Hamakua District, Hawaii Island, Hawaii Territory, have been proved plague-infected.

Indochina—Tanghai.—During the week ended April 11, 1936, 2 fatal cases of plague were reported at Tanghai, Indochina.

Malta—Curmi.—During the week ended April 18, 1936, 3 cases were confirmed as bubonic plague at Curmi, Malta.

Smallpox

China—Canton.—During the week ended April 4, 1936, 1 case of smallpox was reported at Canton, China.

Iraq—Basra.—During the week ended April 18, 1936, 2 cases of smallpox were reported at Basra, Iraq.

Mexico.—Smallpox has been reported in Mexico as follows: January, 1936, Chiapas State, 1 case; Guanajuato State, 5 cases, 5 deaths, including 1 case and 5 deaths at Leon; Jalisco State, 109 cases, 28 deaths, including Guadalajara, 85 cases, 24 deaths; Mexico Federal District, 10 cases, 3 deaths, including Mexico City, 9 cases, 3 deaths; Puebla State, 2 cases, 1 death; Tamaulipas State, 8 cases. February 1936, Aguascalientes State, Aguascalientes, 5 cases, 1 death; Coahuila State, Torreon, 1 case; Colima State, 1 case; Jalisco State, Guadalajara, 115 cases, 50 deaths; Lower California, 7 cases; Mexico State, 2 cases, 2 deaths; Mexico Federal District, 22 cases, 4 deaths; Puebla State, 9 cases, including Puebla, 8 cases; Sonora State, 1 case.

Typhus Fever

Mexico.—Typhus fever has been reported in Mexico as follows: January 1936—Guanajuato State, 15 cases, 3 deaths, including Leon, 7 cases, 1 death; Mexico Federal District, 86 cases, 26 deaths, including Mexico City, 75 cases, 22 deaths; Oaxaca State, 1 case; Puebla State, 1 case; Queretaro State, 3 cases; San Luis Potosi State, San Luis Potosi, 8 cases. February 1936—Aguascalientes State, Aguascalientes, 5 cases; Durango State, 1 case; Guanajuato State, Leon, 16 cases, 1 death; Mexico State, 2 cases, 3 deaths; Mexico Federal District, 73 cases, 20 deaths; Oaxaca State, 2 cases, 1 death; Puebla State, Puebla, 2 cases, 1 death; San Luis Potosi State, San Luis Potosi, 6 cases, 1 death.

Yellow Fever

Bolivia—Santa Cruz Department—Terebinto.—During the month of March 1936, 10 cases of yellow fever were reported at Terebinto, Santa Cruz Department, Bolivia.

Brazil.—Yellow fever has been reported in Brazil as follows: Matto Grosso State, Campo Grande, April 7, 1936, 1 case, 1 death; Minas Geraes State, Arary, March 20, 1936, 1 case, 1 death; Parana State, Jacarezinho, March 22, 1936, 1 case, 1 death; Londrina, March 17–21, 1936, 2 cases, 2 deaths; Sao Paulo State, Agudos, March 2, 1936, 2 cases, 2 deaths; Araraquara, March 26, 1 case, 1 death; Assis, March 5, 1 case, 1 death; Avare, March 1, 2 cases, 2 deaths; Batataes, February 29, 1 case, 1 death; Cerequira Cezar, March 2, 1 case, 1 death; Espirito Santo de Turvo, February 28, 1 case, 1 death; Patos, March 24, 1 case, 1 death; Piratininga, March 3, 2 cases, 2 deaths; Rincao, March 3, 1 case, 1 death; Santa Cruz de Rio Pardo, February 25–27, 2 cases, 2 deaths.

Colombia.—Yellow fever has been reported in Colombia as follows: Boyaca Department, January 6–23, 1936, 3 deaths; Intendencia of Meta, Villavicencio, January 25–29, 1936, 2 deaths.

Niger Territory—Fada N'Gourma.—During the week ended April 18, 1936, 1 case of yellow fever was reported at Fada N'Gourma, Niger Territory.