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INCIDENCE - The number of new cases occurring in a stated area during a specific time period, usually one year. The incidence rate is calculated by dividing this figure by the population of the area during the period and multiplying by 1000 (for rate per 1000) or 100,000 (for rate per 100,000). Because of inadequacy of case finding of syphilis, many cases are not discovered until the later stages of the disease. The true incidence cannot be determined. For trend purposes, the number of cases of early syphilis discovered may be used as an estimate of incidence.

VD FACT SHEET

**Division of Venereal Disease
Office of Statistics**

December, 1949

For reasons outlined in THE JOURNAL OF VENEREAL DISEASE INFORMATION, July 1949, it is No. 6. The incidence has been decreasing for the past three years in the areas which are covered by control programs.

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1942	206,000	172,000
1943	259,000	231,000
1944	247,000	201,000
1945	231,000	172,000
1946	261,000	202,000
1947	240,000	212,000
1948	193,000	172,000
1949	183,000	135,000

Years 1936-37 and 1938 (Source 1)
Years 1941 - 1949 (Source 2)



The incidence of gonorrhea is estimated to be at least five times the syphilis incidence (Source 3).

**FEDERAL SECURITY AGENCY
PUBLIC HEALTH SERVICE**

INCIDENCE - The number of new cases occurring in a stated area during a specific time period, usually one year. The incidence rate is calculated by dividing this figure by the average population of the area during the period and multiplying by 1000 (for rate per 1000) or 100,000 (for rate per 100,000). Because of inadequacy of case finding of syphilis, many cases are not discovered until the later stages and therefore the true incidence cannot be determined. For trend purposes, however, the number of cases of early syphilis discovered may be taken as the "minimum" incidence.

For reasons outlined in THE JOURNAL OF VENEREAL DISEASE INFORMATION, July 1949, it is believed that U.S. syphilis incidence has been decreasing for the past three years in the areas which are covered by control programs.

TABLE I

Estimated U.S. Annual Minimum Incidence of Syphilis
1936 - 1949

Fiscal Year	Total Population	Civilian Only
1936-37	-	259,000
1940-41	-	173,000
1941	183,000	177,000
1942	206,000	192,000
1943	259,000	231,000
1944	247,000	201,000
1945	231,000	178,000
1946	261,000	202,000
1947	240,000	214,000
1948	193,000	178,000
1949	151,000	139,000

Years 1936-37 and 1940-41 (source 1)

Years 1941 - 1949 (source 2)

The incidence of gonorrhea is believed to be at least five times the syphilis incidence (Source 3).

PREVALENCE - The total number of cases of a disease existing in a specified area at any point of time. The prevalence rate is determined by dividing this figure by the population of the area at that time and multiplying by 100 (rate per 100) or 1000 (rate per 1000).

The prevalence rate per 1000 of syphilis detected among selectees and volunteers examined in 1941 by color and age groups (all males) is shown by table II.

TABLE II

Syphilis Detected in Selective Service Examinations
Prevalence Rate per 1000 Tested
Age Group 21 - 35

Age Group	White	Non-White	Total
21-25	10.1	191.2	30.1
26-30	20.9	293.7	54.4
31-35	37.7	357.2	85.2
TOTAL	17.4	252.3	45.3

(source 4)

The prevalence of syphilis among examined sexual contacts of persons known to have primary or secondary syphilis is approximately 50 percent for White males, 51 percent White females, 55 percent Non-White males, and 59 percent for Non-White females. (source 5)

The estimated prevalence of total syphilis in the United States is about three million cases (source 3).

1/ Estimated

Source 2 (1941 - 1949 Military cases excluded)

Source 19 (1919 - 1940 Military cases included)

TABLE III

Cases of Syphilis and Gonorrhea Reported to the Public Health Service
By State Health Departments
Continental United States
1919 - 1949

Fiscal Year	Syphilis	Gonorrhea
1919	100,466	131,193
1920	142,869	172,387
1921	217,817	203,281
1922	171,824	152,959
1923	172,258	156,826
1924	193,844	160,790
1925	200,584	165,523
1926	215,547	166,655
1927	196,219	160,555
1928	176,502	143,490
1929	195,559	156,544
1930	213,309	155,875
1931	229,310	155,729
1932	260,564	158,083
1933	234,647	149,527
1934	230,890	153,255
1935	254,551	161,810
1936	266,626	162,487
1937	336,147	182,435
1938	480,140	198,439
1939	478,738	182,314
1940	472,900	175,841
1941	477,841	191,306
1942	472,245	212,384
1943	564,918	275,648
1944	458,199	300,585
1945	356,315	284,994
1946	360,918	364,853
1947	373,296	400,659
1948	338,141	363,014
1949 ^{1/}	288,640	331,654

^{1/} Estimated

Source 2 (1941 - 1949 Military cases excluded)

Source 19 (1919 - 1940 Military cases included)

TABLE IV

Diagnosed Cases of Venereal Diseases Reported for the First Time

Fiscal Years 1941 - 1949

(Known Military Cases are excluded)

Thousands of cases

Year	Syphilis					Gonorrhea	Other Venereal Diseases		
	Primary and secondary	Early Latent	Late and Late latent	Congenital	Not stated		Chancroid 1/	Granuloma Inguinale	Lymphogranuloma Venereum
In States and Territories									
1941	68.3	108.9	201.9	18.0	82.9	193.0	3.3	0.6	1.3
1942	78.6	118.3	206.5	18.9	62.2	218.6	5.6	1.3	1.9
1943	84.6	150.7	256.9	17.9	65.9	280.9	8.5	1.8	2.4
1944	80.3	125.4	208.8	15.7	42.5	307.5	8.0	1.8	2.9
1945	78.6	104.9	146.5	14.7	23.4	293.7	5.6	1.9	2.7
1946	96.2	110.7	129.1	14.2	20.8	372.6	7.3	2.2	2.6
1947	107.8	111.5	124.6	14.1	24.5	409.8	9.4	2.4	2.7
1948	81.4	101.4	125.9	14.5	22.7	372.2	8.9	2.3	2.5
1949 ^{2/}	54.9	88.0	123.8	15.7	14.1	342.9	7.4	2.7	2.1
In Continental United States									
1941	68.0	108.7	201.2	17.6	82.4	191.3	3.3	0.6	1.3
1942	75.7	116.4	202.2	16.9	61.0	212.4	5.4	1.3	1.9
1943	82.2	148.9	253.0	16.2	64.6	275.6	8.3	1.7	2.4
1944	78.4	122.4	203.4	13.6	40.4	300.6	7.9	1.8	2.9
1945	77.0	101.1	142.7	12.3	23.1	285.0	5.5	1.8	2.6
1946	95.0	107.3	125.8	12.1	20.7	364.9	7.1	2.2	2.6
1947	107.0	107.8	122.3	12.3	24.4	400.7	9.0	2.4	2.7
1948	80.5	97.7	124.0	13.3	22.6	363.0	8.6	2.3	2.5
1949 ^{2/}	54.3	84.3	121.9	14.3	13.9	331.7	7.2	2.7	2.1

1/ Includes some unspecified "Other Venereal Diseases".

2/ Estimated

(Source 2)

TABLE V

**Reported Syphilis Case Rate per 1000 Population
U.S. 1941 - 1949**

Year	Total Including Not Stated	Primary or Secondary	All Early Syphilis P. - S. - E.L.	Congenital	Late and Late latent
Continental U. S. Civilians					
1941	3.623	.515	1.339	.133	1.525
1942	3.579	.574	1.456	.128	1.533
1943	4.388	.639	1.796	.126	1.965
1944	3.607	.617	1.581	.107	1.601
1945	2.805	.606	1.402	.097	1.124
1946	2.703	.711	1.515	.091	0.942
1947	2.648	.756	1.520	.087	0.867
1948	2.345	.559	1.236	.092	0.860
1949*	1.971	.370	.946	.098	0.832
Total Armed Forces^{1/} and Continental U.S. Civilians					
1941	3.648	.558	1.377	.133	1.517
1942	3.629	.669	1.538	.126	1.510
1943	4.371	.813	1.911	.119	1.865
1944	3.670	.905	1.796	.099	1.481
1945	2.945	.934	1.662	.089	1.027
1946	2.994	1.100	1.864	.086	0.896
1947	2.801	.931	1.687	.086	0.857
1948	2.430	.659	1.331	.092	0.852
1949*	2.034	.450	1.020	.097	0.824

* Estimated

^{1/} Includes U.S. Armed Forces Overseas

(Source 6)

TABLE VI

Reported Mortality and Insanity Due to Syphilis
 Reported VD Case Rates per 100,000 Population by Color and Sex
 Continental U.S. Civilians
 Fiscal Years 1947 - 1949

Disease, Stage and Year		Syphilis Mortality Rates				Infant Mortality Rates				Admission Rates to Mental		
		per 100,000				Due to Syphilis per 1000				Hospitals Due to Syphilis		
		population				live births				per 100,000 P.		
		Total	White	Male	Female	Total	White	Male	Female	Total	Male	Female
Total Syphilis (includes Not Stated)	1947	264.75	263.73	265.74	118.48	133.13	104.22	1507.81	1389.42	1619.89		
	1948	234.52	230.85	238.09	98.73	110.18	87.55	1375.49	1256.50	1489.09		
	1949*	199.84	198.77	200.88	83.21	93.45	73.20	1179.85	1093.98	1261.84		
Primary	1947	75.60	85.59	65.91	36.85	44.79	29.13	404.86	437.25	374.21		
Secondary	1948	55.85	62.27	49.60	25.78	31.68	20.01	308.53	322.23	295.45		
Syphilis	1949*	39.59	44.46	34.85	17.75	22.24	13.37	223.11	233.38	213.31		
Early	1947	76.42	62.20	90.22	24.96	23.58	26.31	513.72	395.04	626.07		
Latent	1948	67.79	54.15	81.08	20.70	18.57	22.78	463.46	356.60	565.49		
Syphilis	1949*	58.15	47.16	68.86	17.79	16.03	19.50	397.32	311.75	479.00		
Late and	1947	86.71	90.08	83.44	42.91	49.39	36.61	458.87	440.73	476.06		
Late Latent	1948	85.98	89.14	82.91	38.71	44.77	32.79	483.20	466.25	499.39		
Syphilis	1949*	86.24	95.06	77.64	37.79	43.98	31.74	454.79	450.29	459.08		
Congenital	1947	8.71	7.51	9.88	4.33	3.56	5.07	45.96	41.49	50.20		
Syphilis	1948	9.23	8.03	10.40	4.15	3.39	4.89	51.91	47.48	56.15		
	1949*	9.40	8.31	10.46	3.69	3.22	4.16	57.34	51.56	62.84		
Gonorrhea	1947	284.16	384.11	187.17	118.97	157.12	81.85	1687.92	2340.59	1070.09		
	1948	251.77	356.91	149.34	95.90	129.73	62.86	1561.47	2287.84	867.97		
	1949*	231.22	330.56	134.45	81.91	111.50	53.03	1485.81	2192.60	811.04		

(Source 2 & 7)

* 1949 Estimated

TABLE VII

**Reported Mortality and Insanity Due to Syphilis
Continental U.S. Civilians
1933 - 1948**

Fiscal year	Syphilis Mortality Rates per 100,000 population			Infant Mortality Rates Due to Syphilis per 1000 live births			Admission Rates to Mental Hospitals Due to Syphilis per 100,000 Population ^{1/}
	Total	White	Non-White	Total	White	Non-White	Total
1933	15.1	10.9	52.4	.79	-	-	6.6
1934	15.9	11.3	56.6	.74	-	-	6.6
1935	15.4	11.0	54.0	.70	-	-	6.6
1936	16.2	11.5	56.8	.73	-	-	6.6
1937	16.1	11.4	58.0	.69	.37	2.96	6.4
1938	15.9	11.1	58.2	.63	.33	2.81	6.3
1939	15.0	10.4	55.1	.57	.28	2.60	6.6
1940	14.4	9.9	54.3	.53	.25	2.52	5.8
1941	13.3	9.3	47.5	.41	.18	2.03	6.1
1942	12.2	8.6	42.5	.30	.15	1.50	5.9
1943	12.1	8.6	42.1	.25	.12	1.28	5.4
1944	11.3	7.9	39.6	.27	.12	1.35	5.3
1945	10.7	7.5	36.9	.25	.11	1.26	5.2
1946	9.3	6.6	32.1	.16	.07	.92	4.7
1947	8.8	6.4	29.9	.14	.05	.82	4.2
1948 ^{2/}	8.2	-	-	.13	-	-	-

Source 8, 9, 10, 11

^{1/} Does not include admissions to V.A. Hospitals^{2/} Estimated

TABLE VIII
Clinic and Epidemiologic Data
1947 - 1948 - 1949

Clinic and Epidemiologic Data	1947	1948	1949 ^{1/}
Diagnostic examinations in public clinics.....	1,776,087	2,328,002	2,275,556
Percent of examinations in which one or more V.D. was found.	30.0	21.0	20.3
Previous untreated syphilis cases found per 100 examined.	9.3	6.7	5.7
Previous untreated pri. - sec. syphilis cases found per 100 examined.	3.2	1.9	1.3
Percent of early syphilis discovered sent to R.T.C. for treatment.	61.0	65.5	57.0
Number of contact investigations completed....	476,368	408,054	380,068
Number of other suspect investigations completed.	177,169	164,003	154,015
Approximate no. of contacts obtained per pri. & sec. syphilis patient.	1.79	2.30	2.53
Approximate no. of syphilis infections identified by contact investigation per pri. - sec. patient.54	.70	.72
Approximate no. of syphilis infections brought to treatment thru contact investigation per pri. - sec. patient.30	.37	.40
Approximate no. of pri. - sec. syphilis brought to treatment thru contact investigation per pri. - sec. patient.15	.17	.18

^{1/} Data are provisional
 (Source 2 and 25)

TABLE IX
Annual Appropriations for V.D. Control

Agency	Fiscal 1949	Fiscal 1950
Federal	\$17,370,000	16,000,000
State	7,100,000	7,000,000
Local	15,900,000	16,000,000
Total	\$40,370,000	39,000,000

(Source 3)

Some Costs of Uncontrolled V. D.

Venereal Disease Disability in Man-years.	
Hospitalization for syphilis treatment (Fiscal 1949) ^{12/}	3,254
Hospitalization for syphilitic insanity (1944) ^{13/}	25,450
Disability from cardiovascular syphilis (1945) ^{3/}	7,820
Disability from locomotor ataxia (1945) ^{3/}	5,070
Disability from syphilitic blindness (1946) ^{3/}	13,400
<hr/>	
Economic cost of Paresis and Syphilitic Blindness	
Maintenance of paretics (1940) ^{14/}	\$11,000,000
Loss of income by male paretics (1940) ^{14/}	112,000,000
Maintenance of syphilitic blind (1939) ^{15/}	4,000,000
Loss of income by syphilitic blind (1939) ^{15/}	6,000,000
<hr/>	
Syphilitic loss of Life in Man-years (1944)	
White ^{16/}	201,000
Non-White ^{17/}	150,000
Total Population.....	351,000
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PENICILLIN IN THE TREATMENT OF SYPHILIS - EARLY SYPHILIS -
 Only 30 percent of patients with early syphilis admitted to clinics for routine therapy received the minimum protective regimen of 20 arsenical injections together with heavy metals^{26/}. Under present penicillin schedules for in-patients (ranging in duration from 4 to 14 days), 99 percent complete treatment.^{12/}

TABLE X

**Treatment of Syphilis with Crystalline Penicillin G
Results of Six Schedules with 21-24 Months
Posttreatment Observation**

Schedule of Therapy	Seronegative Primary			Seropositive Primary			Secondary		
	Cases observed 21-24 mo.	Cumulative percent re-treated	Percent Sero- negative	Cases observed 21-24 mo.	Cumulative percent re-treated	Percent Sero- negative	Cases Observed 21-24 mo.	Cumulative percent re-treated	Percent Sero- negative
4,800,000 units - 80,000 q 3 hrs.	20	13.2(\pm 15.1)	86.7	23	13.6(\pm 14.3)	82.1	104	13.8(\pm 6.8)	84.4
4,800,000 units - 53,333 q 2 hrs.	25	7.4(\pm 10.5)	92.6	36	15.1(\pm 11.9)	82.3	110	10.9(\pm 5.9)	83.7
2,400,000 units - 40,000 q 3 hrs.	38	7.8(\pm 8.7)	92.2	56	16.8(\pm 10.0)	83.3	138	16.6(\pm 6.3)	80.4
2,400,000 units - 26,667 q 2 hrs.	31	9.0(\pm 9.8)	91.0	57	11.1(\pm 8.3)	88.8	105	14.4(\pm 6.8)	79.7
2,800,000 units - 25,000 q 3 hrs.	26	11.3(\pm 12.4)	88.7	35	13.2(\pm 11.4)	83.9	109	22.8(\pm 8.0)	70.9
1,800,000 units - 16,667 q 2 hrs. + 5 ars. & 3 bis.	48	18.0(\pm 11.1)	81.9	112	16.8(\pm 7.1)	78.8	386	22.8(\pm 4.3)	65.3

NOTE: Figures in parenthesis represent twice the standard error.

(Source 18)

CONGENITAL SYPHILIS - There is a significantly greater percentage of patients with satisfactory progress among children treated at less than 6 months of age than among children treated at 6 months to 2 years of age or children treated at 2 years of age or over.

TABLE XI

Age of child at time of treatment	Satisfactory Progress	Unsatisfactory Progress
	6 - 18 months Posttreatment	6 - 18 months Posttreatment
Less than 6 months	95.7 Percent	4.3 Percent
6 mos. - 1 yr. 11 mos.	75.0 "	25.0 "
2 years and over	61.4 "	38.6 "

(Source 18)

SYPHILIS IN PREGNANCY - Penicillin therapy among pregnant syphilitic women is very effective in preventing congenital syphilis. Treatment by weekly injections of arsenicals and heavy metal started after the fifth month of pregnancy had a failure rate of over 22% (24) which is nearly six times higher than the failure rate of penicillin begun in the third trimester (20). Arsenical and heavy metal treatment begun before the fifth month of pregnancy has a failure rate over twice that of penicillin.

Present evidence on the outcome of pregnancies of mothers treated for syphilis with penicillin before pregnancy indicates that the child was protected in more than 99 percent of the cases. These were mothers for whom the physician believed the original treatment for the infection was sufficient, and who were permitted to go through the pregnancy without additional therapy (18).

TABLE XII

Outcome of Pregnancy by Stage of Disease at the time of Mother's Treatment

Stage of Disease at time of Mother's treatment with penicillin	Percent of Total Live Births	
	Congenital	Non-Syphilitic
All Diagnoses	3.5	96.5
Primary & Secondary	4.2	95.8
Early Latent	2.1	97.9

(Source 20)

TABLE XIII

Penicillin in the Treatment of Gonorrhea

Treatment Schedule	Percent Cure*	Source
200,000 units - Single injection - Calcium Penicillin in peanut oil and 4.8% beeswax	92	(21)
200,000 units - 3 injections in 2 hrs. - Sodium Penicillin aqueous (50,000 - 50,000 - 100,000)	94	(22)
200,000 units - 4 injections in 3 hrs. - Sodium Penicillin aqueous (40,000 - 40,000 - 40,000 - 80,000)	96	(22)
200,000 units - 3 injections in 2 hrs. - Crystalline G Penicillin aqueous (50,000 - 50,000 - 100,000)		(23)
Given by intramuscular needle injection	97.9	
Hypospray Administration	97.5	

* Clinically and bacteriologically free of infection, i.e., without signs or symptoms and with three or more cultures - all negative - during the observation period.

REFERENCES:

1. N.Y. State Journal of Medicine, Oct. 1, 1943; Vol. 43, No. 19, pp 1825-29, Table 4.
2. Tabulated by the Syphilis Control Section, VD Division, based on PHS Form 8950-B and/or 8950-C.
3. Unpublished estimate VD Division.
4. J.A.M.A., Dec. 28, 1942; Vol. 117, pp 1369-1372.
5. J. Ven. Dis.
6. PHS Form 8950-B, Series P-25, Nos. 1, 13, 23, Incidence of V.D. in U.S. Army Troops 1941-1945, Medical Statistics Division, Dept. of the Army, Medical Statistics Section, Navy Medical Statistics Section, 1945-1949.
7. Vital Statistics Rates in U.S., 1933-1940.
8. Vital Statistics of the U.S., 1941-1947.
9. Population Release, Patients in Mental Institutions, 1933-1947.
10. Special Population Reports, Series P-45, No. 5, Series P-25.
11. Division of Venereal Diseases.
12. Calculated from number of discharges and deaths and length of stay in State Hospitals - "Patients in Mental Institutions", Census Bureau (1944, 1945) and other Hospitals included and based on State Hospital data.
13. J. Ven. Dis. Inform., Aug. 1945, pp. 175-183.
14. J. Ven. Dis. Inform., April 1939, pp. 91-95.
15. J. Ven. Dis. Inform., July 1943, pp. 193-200, Table 5.
16. Calculated from Vital Statistics of the U.S., 1944 and Provisional U.S., 1945, Tables 1945, Calculation by VD Division, PHS.

TABLE XIV

Severe Reactions and Deaths to Syphilis Treatment
Reported by 36 Rapid Treatment Centers
July 1946 Through June 1949

Treatment Schedule	Total cases treated	Severe Reactions		Treatment Deaths	
		Number	Rate per 1,000	Number	Rate per 1,000
Aqueous Penicillin	83,507	426	5.53	-	0
Penicillin - Oil - Beeswax	40,044	48	1.20	-	0
Procaine Penicillin	2,702	4	1.48	-	0
Procaine Penicillin with 2% Aluminum monostearate	13,702	11	.80	1	.07
Aqueous Penicillin with Arsenoxide	107,008	1671	15.62	17	.16
Penicillin - Oil - Beeswax with Arsenoxide	48,121	279	5.80	1	.02
Procaine Penicillin with Arsenoxide	808	5	6.19	-	0
TOTAL	295,892	2480	8.38	19	.06

(Source 18)

REFERENCES:

1. N.Y. State Journal of Med.: Oct. 1, 1943; Vol. 43, No. 19, pp 1825-29, Table 4.
2. Tabulated by the Program Evaluation Section, VD Division, based on PHS Form 8958-B and/or 8954-A.
3. Unpublished estimate VD Division.
4. J.A.M.A., Dec. 26, 1942; Vol. 120, pp. 1369-1372.
5. J.Ven. Dis. Inform., Aug. 1948; Vol. 29, p. 231.
6. PHS Form 8958-B; Census Bureau: Special Population Reports, Series P-46, No. 6, Series P-25, Nos. 3, 13, 27; Incidence of V.D. in U.S. Army Troops 1941-1946, Medical Statistics Division, Dept. of the Army; Medical Statistics Division, Dept. of the Army, Health of the Army 1947-1949; Medical Statistics Division, Bureau of Medicine and Surgery, Dept. of the Navy, 1941-1945; Statistics of Navy Medicine 1946-1949.
7. Unpublished Estimate of Census Bureau.
8. Census Bureau: Vital Statistics Rates in U.S. 1933-1940.
9. Census Bureau: Vital Statistics of the U.S. 1941-1947.
10. Census Bureau Population Release, Patients in Mental Institutions, 1933-1947.
11. Census Bureau: Special Population Reports, Series P-45, No. 5, Series P-25, No. 21.
12. Division of Venereal Disease
13. Calculated from number of discharges and deaths and length of stay in State Hospitals - "Patients in Mental Institutions", Census Bureau 1944, Estimate for other Hospitals included and based on State Hospital data.
14. J. Ven. Dis. Inform., Aug. 1945, pp. 175-183
15. J. Ven. Dis. Inform., April 1939, pp. 91-95
16. J. Ven. Dis. Inform., July 1948, pp. 193-200, Table 5.
17. Calculated from Vital Statistics of the U.S. 1944 and Provisional U.S. Life Tables 1945, Calculation by VD Division, PHS.

18. Unpublished Data, Office of Statistics, Division of Venereal Disease
19. Annual Reports of the Public Health Service 1919-1940.
20. J. Ven. Dis. Inform., April 1949, pp. 95-100.
21. J. Ven. Dis. Inform., May 1945, pp. 98-103.
22. J. Ven. Dis. Inform., Sept. 1946, pp. 225-228
23. J. Ven. Dis. Inform., March 1948, pp. 61-63
24. "Modern Treatment of Syphilis", Moore, J.E. 2nd. Ed., p. 495, 1943
25. Special Semi-annual Contact Investigation Reports which include Clinic and R.T.C. Activity.
26. J. Ven. Dis. Inform., August 1945, p. 171.