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PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

July 14–August 10, 1940

The accompanying table summarizes the prevalence of eight important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the Public Health Reports under the section "Prevalence of disease". The table gives the number of cases of these diseases for the 4-week period ended August 10, 1940, the number reported for the corresponding period in 1939, and the median number for the years 1935–39.

With the exception of influenza and measles, the incidence during the 4 weeks ended August 10 of the eight communicable diseases under consideration was again below the median expectancy for the period.

Influenza.—The number of cases (1,476) of influenza reported for the 4 weeks ended August 10 was about 38 percent higher than the number reported for the corresponding period in 1939 and about 50 percent higher than the median incidence for this period. The increase seemed to be largely due to a somewhat higher incidence in the West South Central and South Atlantic regions than would normally be expected at this season of the year.

Measles.—The number of cases (10,086) of measles reported for the 4 weeks ended August 10 was 80 percent higher than the number reported for the corresponding period in 1939, and 22 percent higher than the median incidence for this period. The increase is reflected largely in the higher incidence in the New England and Middle Atlantic regions, but all sections except the South Atlantic and Pacific reported more cases than the median expectancy for the region.

DISEASES BELOW MEDIAN PREVALENCE

Diphtheria.—For the 4 weeks ended August 10 there were 640 cases of diphtheria reported, as compared with 1,030, 1,288, and 1,158 cases for the corresponding period in 1939, 1938, and 1937, respec-

tively. The current incidence was about 62 percent of the incidence last year and about 55 percent of the 1935–39 median figure for this period.

Number of reported cases of 8 communicable diseases in the United States during the 4-week period July 14–Aug. 10, 1940, the number for the corresponding period in 1939, and the median number of cases reported for the corresponding period 1935–39 [1]

Division	Current period	1939	5-year median	Current period	1939	5-year median	Current period	1939	5-year median	Current period	1939	5-year median
	Diphtheria			Influenza [2]			Measles [3]			Meningococcus meningitis		
United States [1]	640	1,030	1,158	1,476	1,069	987	10,086	5,600	8,294	106	122	250
New England	16	16	52	3	1	3	1,927	899	899	5	5	9
Middle Atlantic	74	129	158	13	20	20	3,213	1,384	2,631	17	31	49
East North Central	110	136	211	93	91	107	2,618	600	2,328	11	11	45
West North Central	63	46	74	11	14	97	373	265	265	13	7	14
South Atlantic	124	284	265	526	554	317	400	409	535	21	19	48
East South Central	50	156	156	59	106	97	372	90	199	20	24	24
West South Central	91	107	192	636	177	212	362	231	184	8	16	15
Mountain	51	70	62	86	64	64	345	238	308	4	4	7
Pacific	61	86	83	49	42	57	476	1,484	977	7	5	15
	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
United States [1]	716	783	783	2,985	3,117	3,796	108	178	239	1,481	2,001	2,322
New England	7	16	22	157	185	252	0	0	0	33	40	39
Middle Atlantic	19	71	71	796	637	747	0	0	0	122	140	171
East North Central	183	214	76	939	921	1,404	20	66	66	113	220	258
West North Central	127	69	28	256	359	419	45	57	81	113	128	128
South Atlantic	65	113	102	244	320	286	1	1	2	284	493	542
East South Central	42	28	83	147	176	158	8	2	2	185	337	436
West South Central	89	42	25	103	112	153	6	9	9	513	541	604
Mountain	41	22	19	100	152	163	20	12	40	45	51	68
Pacific	143	208	97	243	255	315	8	31	45	73	51	66

[1] 48 States. Nevada is excluded and the District of Columbia is counted as a State in these reports.
[2] 44 States and New York City.
[3] 47 States. Mississippi is not included.

Meningococcus meningitis.—The incidence of meningococcus meningitis remained at a low level. For the current period there were 106 cases reported, as compared with 122 for the corresponding period in 1939 and a median of 250 cases for the years 1935–39. Each section of the country shared in the favorable situation of this disease that now exists, but in the West North Central and East South Central regions the cases for the current period were only slightly less than the 1935–39 median.

Poliomyelitis.—Of a total of 716 cases of poliomyelitis reported for the 4 weeks ended August 10, Indiana reported 70, Washington 67, California and Kansas 65 each, Michigan 54, West Virginia 43, Texas and Ohio 37 each, Iowa 36, Louisiana 31, Kentucky 26, Montana 21, Oklahoma 19, and Illinois 16; approximately 82 percent of the cases occurred in those 14 States. For the country as a whole the current incidence is approximately 91 percent of the 1939 figure for

this period, which number (783 cases) also represents the 1935–39 median.

Scarlet fever.—The scarlet fever incidence (2,985 cases) was slightly lower than the recorded incidence for the corresponding period in 1939, but it was only about 79 percent of the average incidence for recent years. The Middle Atlantic region reported a slight increase over the 1935–39 median incidence, but other regions report very definite declines from the seasonal expectancy.

Smallpox.—The smallpox incidence also remained at a low level, the current incidence (108 cases) being the lowest on record for this period. In the East South Central region the number of cases was slightly higher than might be expected, but other regions reported a significantly low incidence.

Typhoid fever.—The recent favorable record for typhoid fever was maintained during the current period. The number of reported cases (1,481) was only about 74 percent of the number reported in 1939 and approximately 64 percent of the 1935–39 median incidence for this period. The situation was favorable in all sections of the country except the Pacific where the number of cases reported was slightly higher than the median expectancy.

MORTALITY, ALL CAUSES

The average mortality rate from all causes in large cities for the 4 weeks ended August 10, based on data received from the Bureau of the Census, was 10.8 per 1,000 inhabitants (annual basis). The average rate for the years 1935–39 was 10.3. In the two middle weeks of the period (weeks ended July 27 and August 3) the death rates were higher than in either adjacent week (11.9 and 11.7 as compared with 10.0 and 9.6 in the weeks preceding and following). Such excesses at this season of the year are usually due to excessive heat. An examination of data for individual cities indicates that the phenomenon was widespread, including cities from the East coast to Minneapolis and even Los Angeles. In 25 large cities the deaths for one or both of the weeks ended July 27 and August 3 were considerably above the 3-year average for the same week, the excess in many instances running as high as 50 percent and occasionally reaching 100 percent. The 25 cities with considerable excess in deaths were Richmond, Norfolk, Washington, Baltimore, Camden, Philadelphia, New York, Springfield, Mass., Rochester, N. Y., Louisville, Cincinnati, Dayton, Columbus, Cleveland, Detroit, Indianapolis, Milwaukee, Chicago, Peoria, St. Paul, Minneapolis, Des Moines, St. Louis, Kansas City, and Los Angeles.

A DIAGNOSIS CODE FOR USE IN TABULATING MORBIDITY STATISTICS

By THOMAS PARRAN, *Surgeon General, United States Public Health Service*, and WILLIAM L. AUSTIN, *Director, United States Bureau of the Census*

Many nations have agreed upon the International List of Causes of Death as a standard for tabulating and publishing mortality statistics. This list properly gives special attention to the diseases that are the most frequently fatal, but this very fact makes it unsatisfactory for the tabulation of diagnoses for nonfatal illnesses. However, the widespread use of the International List for tabulating deaths makes it essential that it be used as the basis of a list for tabulating morbidity statistics.

Illnesses in hospital and clinic reports and morbidity surveys have thus far been tabulated according to a variety of diagnosis lists; comparison is, therefore, inconvenient if not impossible. There is a definite need for a list of diagnoses suitable for the classification and tabulation of morbidity data. Although several such lists have recently been set up, none that is linked to the last (1938) revision of the International List of Causes of Death has been accompanied by an alphabetical index of diseases to assist in coding illness diagnoses in a uniform way. Without a coding manual of this kind it is impossible for different coders to obtain uniformity in the assignment of specific diagnoses to the categories of the morbidity code.

To meet the need for a uniform tabular list for morbidity statistics that was closely linked to the last revision of the International List of Causes of Death, a committee of consultants was appointed to work with the United States Public Health Service and the Vital Statistics Division of the United States Bureau of the Census in setting up such a suitable diagnosis list. The most active of the consultants and officers were:

Selwyn D. Collins, Ph. D., principal statistician, United States Public Health Service.

Halbert L. Dunn, M. D., Ph. D., chief statistician for vital statistics, United States Bureau of the Census.

Lowell J. Reed, Ph. D., Sc. D., professor of biostatistics and dean, School of Hygiene and Public Health, Johns Hopkins University.

Joseph Berkson, M. D., Sc. D., chief, division of biometry and medical statistics, Mayo Clinic.

Edwin L. Crosby, M. D., Dr. P. H., statistician and supervisor of records, Johns Hopkins Hospital and University.

Theodore A. Janssen, chief of nosology section, division of vital statistics, United States Bureau of the Census.

W. Thurber Fales, Sc. D., director, bureau of vital statistics, Baltimore City Health Department.

The following persons have also cooperated with and furnished helpful advice and material to the committee: Dr. James A. Crabtree,

Dr. Carroll E. Palmer, Dr. W. M. Gafafer, Mrs. Lily V. Welch, and Miss Clara Councell, of the United States Public Health Service; Dr. Helen Jeter, Director of Research, New York Welfare Council; Miss Dorothy Kurtz, Record Librarian, Presbyterian Hospital, New York; Mr. J. T. Marshall, Inspector of Vital Statistics, British Columbia Board of Health.

The diagnosis code which follows has been tentatively agreed upon by the committee as suitable for morbidity tabulations by hospitals and clinics and for sickness surveys to provide a general statement of the frequency of various types of illnesses. Although some classes of diseases, particularly neoplasms, have been shown in considerable detail, it was considered impossible in a list adapted to general use to provide all of the detail that would be desirable in special studies of particular diseases. To make a general list suitable for such studies, it will be found necessary to subdivide the diagnosis categories pertaining to the particular specialty under consideration. There are three ways in which the present list can be expanded. First, the rubrics in this list have been numbered in a way to leave unused numbers at frequent intervals. Second, the code has not employed the symbols X and V which are frequently used to supplement the digits. Third, the code may be expanded by introducing subdivisions of any present code number, to be designated by a letter or decimal.

The number of categories allotted to accidents and poisonings may be larger than the frequency of those conditions justify. However, in coding accidents it seems advisable to take account of both the nature of the injury and the circumstances under which the accident occurred. Thus persons interested in the kind of injury can obtain from this code such data as the number of skull fractures, other simple and compound fractures, joint injuries, lacerations, and superficial injuries with or without regard to the circumstances under which they occurred. Likewise, those interested in the prevention of accidents can obtain data on the circumstances or means of the injury, insofar as that information is available in the original record.

In the three-digit numbering system used for coding purposes, the first two of the three digits designate important or summary categories and the third digit subdivides these into more specific groups. Thus 01 as the first two digits of the code represents a group of common communicable diseases of childhood, while the third digit subdivides these into seven specific diseases. Similarly, 03 represents nonrespiratory tuberculosis, while the third digit separates these cases into tuberculosis of ten specific sites. Of the total of 95 categories in the abridged (2-column) list, 80 are devoted to diseases, 14 to injuries and poisonings, and 1 to conditions without sickness. Of the 527 categories in the detailed (3-column) list, 393 are devoted to

diseases, 130 to injuries and poisonings, and 4 to conditions without sickness. The diagnosis categories shown were selected as: (*a*) Those that occur with considerable frequency in hospital, clinic, and other morbidity data, (*b*) those that could be diagnosed with reasonable accuracy and would thus be codable from the available records, and (*c*) a few categories of small frequency but of general interest from various viewpoints.

The preparation of an alphabetical index of diseases and medical terms with their appropriate code numbers to assist in assigning diagnoses to the categories of the list is under way. In this task also the United States Public Health Service and the Vital Statistics Division of the United States Bureau of the Census are cooperating. The index is to include terms appearing in the Census Bureau's Manual of the International List of Causes of Death, terms collected in a long experience of cross-indexing diagnoses at the Mayo Clinic and the Johns Hopkins Hospital, terms appearing in the Canadian Morbidity Manual, and terms appearing in the Standard Classified Nomenclature of Disease. Terms that appear in more than one of these places will, of course, appear only once in this index. It is necessary to include some ill-defined terms in the index to indicate to the diagnosis coder where the case should be assigned even if it has to go to one of several "waste baskets" of other and ill-defined diseases.

A sickness diagnosis list and manual of this kind will serve in the field of morbidity statistics the function now served in the field of mortality statistics by the International List of Causes of Death and the coding manual prepared by the Vital Statistics Division of the United States Bureau of the Census. It should be emphasized that a morbidity code and manual of this kind will not take the place of or in any way conflict with any nomenclature which may be in use in an institution. The function of a nomenclature is to train the physician to use the clearest and most acceptable diagnostic terms to describe a particular clinical case; the function of this coding manual will be to aid a diagnosis coder in assigning the terms and disease names used by the physician to the proper category in the list for the purpose of statistical tabulations. The better the nomenclature the more accurate will be the assignment of diagnoses for statistical tabulations, but with a complete index to the code, the manual will be usable in connection with any nomenclature. Among those needing such a morbidity diagnosis code as this are hospital service plans which have no control over nomenclature and must accept diagnostic terms from a great variety of hospitals. This code does not attempt to provide enough categories for a detailed diagnosis cross-index, but is designed solely for statistical tabulations.

When the index is completed the code and index will be given a trial of several months in a number of hospitals and in special studies. In

the meantime, suggestions for changes are invited. Revision will be made on the basis of these suggestions and the experience gained in the trials. It is planned to publish the code with the complete index as a Public Health Bulletin. As such it will be available at a nominal price from the Government Printing Office. Inquiries already received from many sources indicate that such a morbidity coding manual will be of immediate value to those working with morbidity statistics.

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS

I. Infectious and Parasitic Diseases

Code Number			International List Number, 1938 revision [1]
00		*Typhoid fever and dysentery:*	
	001	Typhoid fever	1
	002	Paratyphoid fever	2
	007	Bacillary dysentery	27a
	008	Amebic dysentery	27b
	009	Other forms of dysentery	27c
01		*Common communicable diseases of childhood:*	
	010	Scarlet fever	8
	011	Whooping cough	9
	012	Diphtheria	10
	013	Measles	35
	014	German measles	38d
	015	Chickenpox	38e
	016	Mumps	44c
02		*Tuberculosis of the respiratory system:*	
	020	Tuberculosis of the respiratory system, with occupational disease of the lungs	13a
	029	Other tuberculosis of the respiratory system	13b, c
03		*Other forms of tuberculosis:*	
	030	Tuberculosis of the meninges and central nervous system	14
	031	Tuberculosis of the intestines and peritoneum	15
	032	Tuberculosis of the vertebral column	16
	033	Tuberculosis of other bones and joints	17
	034	Tuberculosis of the skin	18
	035	Tuberculosis of the lymphatic system (except bronchial, mediastinal, mesenteric, and retroperitoneal lymph nodes)	19
	036	Tuberculosis of the genito-urinary system	20
	037	Acute miliary tuberculosis	22a
	039	Other forms of tuberculosis	21, 22b
04		*Gonococcus infection:*	
	040	Gonococcus infection of the female genito-urinary system	25
	041	Gonococcus infection of the male genito-urinary system	
	042	Gonococcus infection of the joints	
	043	Gonococcus infection of the eye	
	044	Gonococcus infection of the heart	
	049	Other forms of gonococcus infection	

[1] For the International List titles and inclusions, see Manual of the International List of Causes of Death (based on 1938 Paris revision), prepared by the U. S. Bureau of the Census, Government Printing Office, 1940.

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

I. Infectious and Parasitic Diseases—Continued

Code Number			International List Number, 1938 revision
05		*Malaria:*	
	050	Malignant tertian malaria	28c
	051	Quartan malaria	28b
	052	Benign tertian malaria	28a
	059	Other forms of malaria	28d
06		*Syphilis:*	
	060	Early syphilis	pt. 30g
	061	Late vascular syphilis	30d, e
	062	Tabes dorsalis	30a
	063	General paresis	30b
	064	Other forms of late syphilis of the central nervous system	30c
	065	Other forms of late syphilis	pt. 30g
	066	Congenital syphilis	30f
	067	Syphilis, serology positive (only finding)	pt. 30g
	069	Other forms of syphilis	
07, 08, 09		*Other infectious and parasitic diseases:*	
	070	Undulant fever (brucellosis)	5
	071	Cerebrospinal (meningococcus) meningitis	6
	072	Erysipelas	11
	073	Tetanus	12
	074	Septicemia	24a, b, d
	075	Gas bacillus infection	24c
	076	Tularaemia	26a
	080	Smallpox	34
	081	Acute poliomyelitis	36
	082	Acute infectious encephalitis (lethargic)	38
	083	Herpes zoster	38c
	084	Typhus fever	39a, b, d
	085	Rocky Mountain spotted fever	39c
	090	Ankylostomiasis	40
	091	Actinomycosis	43
	092	Dermatophytosis	
	093	Other forms of mycosis infection	
	094	Chancroid	44a
	095	Other forms of venereal disease (except syphilis and gonorrhea)	
	096	Lymphogranulomatosis	44b
	099	Other infectious and parasitic diseases	3, 4, 7, 23, 26b, 29, 31, 32, 38a, b, f, 41, 42, 44d

II. Neoplasms

10		*Malignant neoplasm of the buccal cavity and pharynx:*	
	100	Malignant neoplasm of the lip	45a
	101	Malignant neoplasm of the tongue	45b
	102	Malignant neoplasm of the salivary glands	pt. 45e
	109	Malignant neoplasm of the pharynx and other parts of the buccal cavity	pt. 45e, 45c, f

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

II. Neoplasms—Continued

Code Number		International List Number, 1938 revision
11	*Malignant neoplasm of the digestive organs:*	
110	Malignant neoplasm of the esophagus	46a
111	Malignant neoplasm of the stomach	46b
112	Malignant neoplasm of the small intestine	46c, pt. 46e
113	Malignant neoplasm of the large intestine (except rectum)	pt. 46e
114	Malignant neoplasm of the rectum	pt. 46d
115	Malignant neoplasm of the pancreas	46g
119	Malignant neoplasm of other digestive organs	46f, h, m
12	*Malignant neoplasm of the respiratory system:*	
120	Malignant neoplasm of the larynx	47a
121	Malignant neoplasm of the bronchus, lung, and pleura	47c, d, e
129	Malignant neoplasm of other parts of the respiratory system	47b, f
13	*Malignant neoplasm of the female genital organs and breast:*	
130	Malignant neoplasm of the cervix uteri	48a
131	Malignant neoplasm of the uterus (except cervix)	48b
132	Malignant neoplasm of the ovary	49a
138	Malignant neoplasm of other female genital organs	49b, c, e
139	Malignant neoplasm of the female breast	pt. 50
14	*Malignant neoplasm of the male genital organs:*	
140	Malignant neoplasm of the prostate	51b
141	Malignant neoplasm of the testis	51c
149	Malignant neoplasm of other male genital organs	51d, e
15, 16	*Other malignant neoplasms:*	
150	Malignant neoplasm of the kidney and adrenal gland	52a, 55a
151	Malignant neoplasm of the bladder	52b
152	Malignant neoplasm of other organs of the urinary system	52c
153	Malignant neoplasm of the skin of the neck, face, and hands	pt. 53
154	Malignant neoplasm of the skin of other sites	pt. 46d, 49d, 51a, pt. 53
157	Malignant neoplasm of the pituitary	54, 57d
158	Malignant neoplasm of the brain	
159	Malignant neoplasm of the spinal cord	
160	Malignant neoplasm of the bone	45d, 55b
161	Malignant neoplasm of the nasal cavity and accessory sinuses	55d
162	Malignant melanoma	pt. 50, 55c, e
163	Generalized lymphosarcoma	
164	Other forms of generalized malignant neoplasm	
169	Other malignant neoplasms	
17	*Nonmalignant neoplasm of the female genital organs and breast:*	
170	Fibroma of the uterus	pt. 56b
171	Endometrioma	pt. 56c
172	Polyps of the female genital organs	
178	Other nonmalignant neoplasms of the female genital organs	56a, pt. 56b, pt. 56c, 57a, 57b, pt. 57c
179	Nonmalignant neoplasm of the female breast	pt. 56c, pt. 57c
18, 19	*Other nonmalignant neoplasms:*	
180	Nonmalignant neoplasm of the pituitary	56d
181	Nonmalignant neoplasm of the brain	
182	Nonmalignant neoplasm of the spinal cord	

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

II. Neoplasms—Continued

Code Number		International List Number, 1938 revision
	Other nonmalignant neoplasms—Continued.	
183	Nonmalignant neoplasm of the digestive organs	pt. 56e, pt. 57e
184	Polyp of the nasal cavity and accessory sinuses	pt. 56e
185	Other nonmalignant neoplasm of the respiratory system	pt. 56e, pt. 57e
186	Nonmalignant neoplasm of the skin	
187	Nonmalignant neoplasm of the bone	
190	Pilonidal cyst	pt. 123
191	Lipoma	pt. 56e
192	Hemangioma and lymphangioma	
199	Other nonmalignant neoplasms	pt. 56e, 57e

III. Rheumatic Fever, Diseases of Nutrition and of the Endocrine Glands, Other General Diseases and Avitaminoses

20	*Acute rheumatic fever:*	
200	Acute rheumatic heart disease	58a, b, c, d
201	Acute rheumatic fever without heart involvement	58e
202	Rheumatic chorea	
21	*Diabetes mellitus:*	
210	Diabetes mellitus with infection or gangrene	61
211	Diabetes mellitus with acidosis or coma	
219	Other diabetes mellitus	
22	*Goiter:*	
220	Toxic nodular goiter	63a, b
221	Nontoxic nodular goiter	
222	Exophthalmic goiter	
229	Other forms of goiter	
23	*Other diseases of the endocrine glands:*	
230	Myxedema and cretinism	63c
231	Hypoparathyroidism	pt. 63e
232	Other diseases of the thyroid and parathyroid	63d, pt. 63e
233	Diseases of the pituitary	62
234	Addison's disease	pt. 21a, 65a
235	Ovarian dysfunction	pt. 66b
239	Other diseases of the endocrine glands	64, pt. 66b
24	*Other nutritional and general diseases:*	
240	Gout	60
241	Obesity	pt. 66b
242	Malnutrition	
245	Other general diseases	66a, pt. 66b
247	Pellagra	69
248	Rickets	70
249	Other avitaminoses	67, 68, 71

IV. Diseases of the Blood and Blood Forming Organs

25	*Anemia:*	
250	Pernicious anemia	73a
251	Secondary anemia	pt. 73c, d
259	Other forms of anemia	73b, pt. 73c, d

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

IV. Diseases of the Blood and Blood Forming Organs—Continued

Code Number		International List Number, 1938 revision
26	*Other diseases of the blood and blood forming organs:*	
260	Primary purpuras	72a
261	Hemophilia	72b
262	Leukemias and aleukemias	74
263	Diseases of the spleen	75
264	Agranulocytosis	76a
269	Other diseases of the blood and blood forming organs	72c, 76b, c, d

V. Chronic Poisoning and Intoxication

27	*Chronic poisoning and intoxication:*	
270	Alcoholism	77
273	Occupational lead poisoning	78a
274	Other lead poisoning	78b
275	Occupational poisoning by other substances	79a
278	Drug addiction	79b
279	Other chronic poisoning	

VI. Diseases of the Nervous System and Sense Organs

28	*Inflammatory diseases of the central nervous system:*	
280	Intracranial abscess	80a
281	Encephalitis, except acute infectious	80b
282	Meningitis, except meningococcus	81
29	*Degenerative diseases of the spinal cord:*	
290	Amyotrophic lateral sclerosis	pt. 82
291	Progressive muscular atrophy	
292	Progressive muscular dystrophy	
293	Multiple sclerosis	87d
30	*Diseases of the cranial nerves:*	
300	Facial paralysis	pt. 87b
301	Trigeminal neuralgia	
309	Other diseases of the cranial nerves	
31	*Intracranial lesions of vascular origin:*	
310	Acute intracranial lesion of vascular origin	83a, b, c
319	Residuals of intracranial lesions of vascular origin	83d
32	*Mental deficiency and psychiatric diseases:*	
320	Mental deficiency	84a
323	Schizophrenia	84b
324	Manic-depressive psychosis	84c
325	Neurasthenia	84d
326	Other minor psychoses	
329	Other psychiatric diseases	
33	*Other diseases of the nervous system:*	
330	Paralysis agitans except result of encephalitis	87c
331	Migraine	pt. 87e
332	Epilepsy	85
335	Other diseases of the central nervous system	pt. 82, 87a, pt. 87e
337	Diseases of the peripheral nerves	pt. 87e
339	Other diseases of the nervous system	86, pt. 87e

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

VI. Diseases of the Nervous System and Sense Organs—Continued

Code Number		International List Number, 1938 revision
34	*Diseases of the organs of vision:*	
340	Glaucoma	88
341	Cataract	
342	Strabismus	
343	Errors of refraction	
344	Detachment of the retina	
345	Trachoma	
346	Ulcer of the cornea	
347	Inflammatory diseases of the eye and eyelid	
349	Other diseases of the organs of vision	
35	*Diseases of the ear and mastoid process:*	
350	Otitis media	89a
351	Other inflammatory diseases of the ear	
352	Deafness	
353	Meniere's disease	
357	Other diseases of the ear	
359	Diseases of the mastoid process	89b

VII. Diseases of the Circulatory System

36	*Chronic rheumatic heart disease:*	
360	Diseases of the mitral valve	92b
365	Other chronic rheumatic heart disease	90a, 92c, 93c, 95b
37	*Hypertensive cardiovascular disease:*	
370	Hypertensive cardiovascular disease	pt. 93
375	Hypertensive cardiovascular-renal disease	pt. 131a
38	*Other diseases of the heart:*	
380	Subacute bacterial endocarditis	pt. 91a
382	Diseases of the coronary arteries and angina pectoris	94
388	Functional diseases of the heart	95a
389	Other diseases of the heart	90b, pt. 91a, 91b, c, 92a, d, e, pt. 93, 95c
39	*Hypertensive vascular disease:*	
390	Hypertensive vascular disease with arteriosclerosis	102
399	Other hypertensive vascular disease	
40	*Other diseases of the arteries:*	
400	Arteriosclerosis	97
401	Vascular aneurysm (except of the aorta)	96
402	Raynaud's disease	99
403	Thrombo-angiitis obliterans	
409	Other diseases of the arteries	
41	*Varicose veins and hemorrhoids:*	
410	Varicose veins of the lower extremities	100a
414	Varicose veins of other sites	
415	Hemorrhoids	pt. 100b
42	*Other diseases of the circulatory system:*	
420	Phlebitis and thrombophlebitis of the lower extremities	pt. 100b
421	Phlebitis and thrombophlebitis of other sites	
424	Other diseases of the veins	
426	Lymphadenitis and lymphangitis	101
429	Other diseases of the circulatory system	98, 103

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

VIII. Diseases of the Respiratory System

Code Number			International List Number, 1938 revision
43		*Influenza:*	
	430	Influenza	33
44		*Acute nasopharyngitis:*	
	440	Acute nasopharyngitis	pt. 104a, pt. 115c
45		*Tonsillitis with tonsillectomy:*	
	450	Tonsillitis with tonsillectomy	pt. 115c
46		*Diseases of the pharynx and larynx:*	
	460	Tonsillitis without tonsillectomy	pt. 115c
	461	Septic sore throat	115b
	466	Other diseases of the pharynx	pt. 115c
	467	Laryngitis	105
	469	Other diseases of the larynx	
47		*Bronchitis:*	
	471	Chronic bronchitis	106b
	479	Other forms of bronchitis	106a, c
48		*Pneumonia:*	
	480	Secondary pneumonia	107–109
	489	Other pneumonia	
49, 50		*Other diseases of the respiratory system:*	
	490	Empyema	110a
	492	Pleurisy with effusion	110b
	493	Other pleurisy	
	495	Sinusitis	104b
	496	Deflected nasal septum	pt. 104a
	499	Other diseases of the nasal fossae	
	500	Allergic rhinitis (hay fever)	112
	501	Asthma	
	503	Pulmonary embolism and infarction	111a
	504	Pulmonary emphysema	113
	505	Silicosis	114a
	506	Other pneumoconiosis	114b
	507	Abscess of the lung	114d
	509	Other diseases of the respiratory system	111b, c, 114c, e

IX. Diseases of the Digestive System

51		*Diseases of the buccal cavity and esophagus:*	
	510	Infected or impacted teeth	115a
	514	Diseases of the salivary glands	115d
	517	Other diseases of the buccal cavity and annexa	
	519	Diseases of the esophagus	116
52		*Ulcer of the stomach and intestine:*	
	520	Acute perforating ulcer of the stomach	117a
	523	Other ulcer of the stomach	
	525	Acute perforating ulcer of the duodenum	117b
	527	Other ulcer of the duodenum	
	529	Ulcer of the intestine (except duodenum)	pt. 119b, pt. 120b
53		*Diarrhea and enteritis:*	
	530	Ulcerative colitis	119–120
	539	Other diarrhea and enteritis	

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

IX. Diseases of the Digestive System—Continued

Code Number			International List Number, 1938 revision
54		*Appendicitis:*	
	540	Appendicitis with perforation	121
	549	Other appendicitis	
55		*Hernia:*	
	550	Inguinal hernia	122a
	551	Femoral hernia	
	552	Ventral hernia	
	553	Umbilical hernia	
	554	Diaphragmatic hernia	
	559	Other intestinal hernia	
56		*Functional digestive disturbances:*	
	560	Functional digestive disturbances	pt. 118, pt. 123
57		*Other diseases of the stomach and intestines:*	
	570	Cardiospasm	pt. 118
	572	Intestinal obstruction	122b
	574	Diseases of the anus and rectum	pt. 123
	579	Other diseases of the stomach and intestines	
58		*Diseases of the liver and gallbladder:*	
	580	Cirrhosis of the liver	124
	583	Acute yellow atrophy of the liver	125a
	584	Other diseases of the liver	125b
	585	Biliary calculi	126
	586	Cholecystitis without biliary calculi	127a
	587	Catarrhal jaundice	127b
	589	Other diseases of the gallbladder and biliary ducts	
59		*Other diseases of the digestive system:*	
	590	Diseases of the pancreas	128
	593	Peritoneal adhesions	129
	595	Peritonitis	
	599	Other diseases of the digestive system	pt. 118, pt. 123

X. Diseases of the Genito-Urinary System

60		*Nephritis:*	
	600	Nephritis	130, 131b, 132
	607	Hypertensive vascular renal disease	pt. 131a
61		*Other diseases of the kidneys and ureters:*	
	610	Pyelitis, pyelonephritis, and pyelocystitis	133a
	612	Hydronephrosis	133b
	617	Other diseases of the kidneys and ureters	
	619	Calculi of the kidney and ureter	134a
62		*Other diseases of the urinary system:*	
	620	Calculi of other parts of the urinary passages	134b, c
	621	Cystitis	135a
	623	Other diseases of the bladder	pt. 135b
	624	Stricture of the urethra	136a
	626	Other diseases of the urethra	pt. 136b
	629	Other diseases of the urinary system	pt. 135b, pt. 136b

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

X. Diseases of the Genito-Urinary System—Continued

Code Number		International List Number, 1938 revision
63	*Diseases of the prostate:*	
630	Hypertrophy of the prostate	137a
631	Calculus of the prostate	137b
632	Prostatitis	137b
639	Other diseases of the prostate	137b
64	*Other diseases of the male genital organs:*	
640	Hydrocele	pt. 138
642	Circumcision	pt. 138
644	Orchitis and epididymitis	pt. 138
649	Other diseases of the male genital organs	pt. 138
65, 66	*Diseases of the female genital organs and breast:*	
650	Diseases of the ovaries, fallopian tubes, and parametrium	pt. 139
652	Cervicitis	pt. 139
654	Other diseases of the uterus	pt. 139
656	Vaginitis and vulvitis	pt. 139
658	Multiple pelvic diseases of the female	pt. 139
660	Cystocele and rectocele of the female	pt. 123, pt. 135b
661	Malposition of the female genital organs	pt. 139
663	Menopause	pt. 139
664	Menstrual disorders	pt. 139
667	Other diseases of the female genital organs	pt. 139
668	Mastitis	pt. 139
669	Other diseases of the female breast	pt. 139

XI. Deliveries and Complications of Pregnancy, Childbirth, and the Puerperium

67	*Delivery with live or stillbirth:*	
670	Spontaneous full term delivery with live birth	pt. 149, pt. 150
671	Operative full term delivery with live birth	pt. 149, pt. 150
672	Spontaneous premature delivery with live birth	pt. 149, pt. 150
673	Operative premature delivery with live birth	pt. 149, pt. 150
674	Spontaneous full term delivery with stillbirth	pt. 149, pt. 150
675	Operative full term delivery with stillbirth	pt. 149, pt. 150
676	Spontaneous premature delivery with stillbirth	pt. 149, pt. 150
677	Operative premature delivery with stillbirth	pt. 149, pt. 150
68	*Toxemia, hemorrhage, and infection of pregnancy, childbirth, and the puerperium:*	
680	Toxemias of pregnancy	pt. 141, 142, 144, 148
682	Placenta praevia	pt. 141, pt. 142, 143.146
683	Premature separation of placenta	pt. 141, pt. 142, 143.146
684	Postpartum hemorrhage	pt. 141, pt. 142, 143.146
685	Other hemorrhage of pregnancy, childbirth, and the puerperium	pt. 141, pt. 142, 143.146
686	Pyelitis and pyelonephritis of pregnancy, childbirth, and the puerperium	pt. 140, pt. 142, pt. 145, 147
687	Phlebitis of pregnancy, childbirth, and the puerperium	pt. 140, pt. 142, pt. 145, 147
689	Other infections of pregnancy, childbirth, and the puerperium	pt. 140, pt. 142, pt. 145, 147
69	*Other complications of pregnancy, childbirth, and the puerperium:*	
690	Infection of the breast during lactation	150a
691	Psychosis of the puerperium	150b

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

XI. Deliveries and Complications of Pregnancy, Childbirth, and the Puerperium—Continued

Code Number	*Other complications of pregnancy, childbirth, and the puerperium*—Continued.	International List Number, 1938 revision
692	Contracted pelvis	pt. 149
693	Trauma of childbirth	
694	Abortion	pt. 140, pt. 141
695	Ectopic pregnancy	pt. 142
696	Multiple pregnancy	pt. 149
698	Other complications of pregnancy	pt. 145
699	Other complications of childbirth and the puerperium	pt. 149, pt. 150

XII. Diseases of the Skin

70, 71	*Diseases of the skin:*	
700	Furuncle and carbuncle	151
702	Cellulitis	pt. 152
704	Paronychia	
709	Other local infections	
710	Eczema	153
711	Impetigo	
712	Scabies	
713	Pediculosis	
714	Urticaria	
715	Psoriasis	
716	Pemphigus	
717	Dermatitis of occupational origin	
718	Dermatitis venenata	
719	Other diseases of the skin	

XIII. Diseases of the Bones and Organs of Movement

72	*Arthritis:*	
720	Chronic infectious arthritis	59a
724	Osteoarthritis	59b
729	Other forms of arthritis	pt. 156
73	*Other diseases of the bones and joints:*	
730	Osteomyelitis	pt. 154
731	Osteitis deformans	pt. 154, 155
733	Old fracture	
734	Other diseases of the bones	
735	Curvature of the spine	pt. 156
736	Sacroiliac disease	
737	Bursitis and synovitis	
739	Other diseases of the joints	
74	*Other diseases of the organs of movement:*	
740	Torticollis	pt. 156
742	Deformities due to previous illness or injury	
744	Ganglion	
746	Flatfoot	
749	Other diseases of the organs of movement	

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

XIV. Congenital Malformations

Code Number		International List Number, 1933 revision
75, 76	*Congenital malformations:*	
750	Spina bifida	157a, b, c, d
752	Other congenital malformations of the central nervous system	
753	Congenital malformations of the heart	157e
754	Congenital malformations of other parts of the cardio-vascular system	157f
756	Harelip and cleft palate	157g
759	Other congenital malformations of the digestive system	
760	Undescended testicle	157h
761	Hypospadias and epispadias	
763	Other congenital malformations of the genito-urinary system	
765	Congenital dislocation of the hip	157m
766	Other congenital malformations of the bones and joints	
769	Other congenital malformations	

XV. Diseases Peculiar to the First Year of Life

77	*Diseases peculiar to the first year of life:*	
770	Prematurity	159
771	Intracranial injury at birth	160a, b
773	Other injury at birth	160c
775	Infections of the newborn	161b
777	Feeding problems	pt. 158
779	Other diseases peculiar to the first year of life	pt. 158, 161a, c

XVI, XVIII. Senility and Other and Ill-Defined Diseases

78	*Senility and ill-defined diseases:*	
780	Senility with psychosis	162a
781	Other senility	162b
783	Rheumatism (except rheumatic fever)	58f, 59c
784	Neuralgia and myalgia	pt. 87b, pt. 156b
785	Headache (except migraine)	pt. 200
789	Other ill-defined diseases	199 pt. 200
79	*All other diseases:*	
790	Reaction from prophylatic inoculation	pt. 200
791	Serum-sickness from therapeutic inoculation	
793	Other allergic manifestations	
799	Other diseases	

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

XVII. Injuries and Poisonings

Code Number		International List Number, 1938 revision
84	*Acute accidental poisoning by drugs commonly injected or taken orally:*	
840	Accidental poisoning by alkaloids	pt. 179
841	Accidental poisoning by barbiturates	
842	Accidental poisoning by bromides	
843	Accidental poisoning by other sedative drugs	
844	Accidental poisoning by arsenicals	
845	Accidental poisoning by digitalis	
846	Accidental poisoning by sulfanilamide and related drugs	
847	Accidental poisoning by strychnine	
848	Accidental poisoning by aspirin and other salicylates	
849	Accidental poisoning by other nonsedative drugs commonly injected or taken orally	
85	*Acute accidental poisoning by chemicals not commonly injected or taken orally:*	
850	Accidental poisoning by bichloride and other mercury compounds	pt. 179
851	Accidental poisoning by lye and other caustic alkalies	
852	Accidental poisoning by alcohol (except ethyl)	
853	Accidental poisoning by carbolic acid and other cresol compounds	
854	Accidental poisoning by silver compounds	
855	Accidental poisoning by kerosene, gasolene, benzol	
856	Accidental poisoning by iodine	
857	Accidental poisoning by oil of wintergreen	
859	Accidental poisoning by other toxic substances not commonly injected or taken orally	
86	*Other acute poisoning:*	
860	Food poisoning from bacterial toxins	177
861	Other food poisoning	
862	Accidental poisoning by illuminating gas	pt. 178
863	Accidental poisoning by motor-vehicle exhaust gas	
864	Accidental poisoning by other toxic substances	pt. 175b, pt. 178, pt. 179, 194
865	Nonaccidental poisoning by gas	pt. 163, pt. 168, pt. 196–198
866	Nonaccidental poisoning by bichloride and other mercury compounds	pt. 163, pt. 168
867	Nonaccidental poisoning by carbolic acid and other cresol compounds	
868	Nonaccidental poisoning by strychnine	
869	Nonaccidental poisoning by other toxic substances	
87	*General effects of external causes:*	
871	Heat prostration	191
872	Effects of cold (low temperature)	190
873	Effects of mechanical suffocation	182
874	Effects of electric shock and lightning	192, 193
875	Effects of hunger or thirst	189
878	Effects of accidental submersion (drowning)	183
879	Effects of nonaccidental submersion (drowning)	164b, pt. 168

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

XVII. Injuries and Poisonings—Continued

Code Number		International List Number, 1938 revision
88	*Injury by foreign body or firearms:*	
881	Foreign body in eye	195d, pt. 195e
882	Foreign body in ear or nose	
883	Foreign body in bronchus or lung	
884	Foreign body in digestive tract	
886	Foreign body in other locations	
888	Accidental injury by firearms	184
889	Nonaccidental injury by firearms	pt. 164c, 166, pt. 196–198
89	*Burn or scald:*	
890	Burn in motor-vehicle accident	pt. 170
891	Burn in other transportation accident	pt. 169, pt. 171–173
892	Burn by hot liquids	180, 181
893	Burn by fire or hot objects	
895	Sunburn	
898	Other accidental burn	
899	Nonaccidental burn	pt. 164g, pt. 168, 196, 197
90	*Fracture of the skull:*	
900	Fracture of skull in motor-vehicle accident	
901	Fracture of skull in other transportation accident	
902	Fracture of skull in machinery accident	
903	Fracture of skull in sports or recreation	
904	Fracture of skull by handling objects or hand tools	
905	Fracture of skull from striking against an object	
906	Fracture of skull from being struck by a falling object	
907	Fracture of skull from fall	
908	Fracture of skull in other accident	
909	Nonaccidental fracture of skull	
91	*Simple fracture, except of the skull:*	
910	Simple fracture in motor-vehicle accident	
911	Simple fracture in other transportation accident	
912	Simple fracture in machinery accident	[2] p. 169–176
913	Simple fracture in sports or recreation	
914	Simple fracture by handling objects or hand tools	pt. 185–188
915	Simple fracture from striking or stepping on an object	
916	Simple fracture from being struck by a falling object	pt. 195–198
917	Simple fracture from fall	
918	Simple fracture in other accident	
919	Nonaccidental simple fracture	
92	*Compound fracture, except of the skull:*	
920	Compound fracture in motor-vehicle accident	
921	Compound fracture in other transportation accident	
922	Compound fracture in machinery accident	
923	Compound fracture in sports or recreation	
924	Compound fracture by handling objects or hand tools	
925	Compound fracture from striking or stepping on an object	
926	Compound fracture from being struck by a falling object	
927	Compound fracture from fall	
928	Compound fracture in other accident	
929	Nonaccidental compound fracture	

See footnote on p. 1574.

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

XVII. Injuries and Poisonings—Continued

Code Number			International List Number, 1938 revision
93		*Dislocation, sprain, or other joint injury without fracture:*	
	930	Joint injury in motor-vehicle accident	
	931	Joint injury in other transportation accident	
	932	Joint injury in machinery accident	
	933	Joint injury in sports and recreation	
	934	Joint injury by handling objects or hand tools	
	935	Joint injury from striking or stepping on an object	
	936	Joint injury from being struck by a falling object	
	937	Joint injury from fall	
	938	Joint injury in other accident	
	939	Nonaccidental joint injury	
94		*Concussion of the brain without fracture of the skull:*	
	940	Concussion of the brain in motor-vehicle accident	
	941	Concussion of the brain in other transportation accident	
	942	Concussion of the brain in machinery accident	
	943	Concussion of the brain in sports or recreation	
	944	Concussion of the brain by handling objects or hand tools	
	945	Concussion of the brain from striking against an object	
	946	Concussion of the brain from being struck by a falling object	[2]pt.169–176
	947	Concussion of the brain from fall	pt. 185–188
	948	Concussion of the brain in other accident	
	949	Nonaccidental concussion of the brain	pt. 195–198
95		*Cut, laceration, or puncture wound:*	
	950	Laceration in motor-vehicle accident	
	951	Laceration in other transportation accident	
	952	Laceration in machinery accident	
	953	Laceration in sports or recreation	
	954	Laceration by handling objects or hand tools	
	955	Laceration from striking or stepping on an object	
	956	Laceration from being struck by a falling object	
	957	Laceration from fall	
	958	Laceration in other accident	
	959	Nonaccidental laceration	
96		*Abrasion, contusion, or other superficial injury:*	
	960	Superficial injury in motor-vehicle accident	
	961	Superficial injury in other transportation accident	
	962	Superficial injury in machinery accident	
	963	Superficial injury in sports or recreation	
	964	Superficial injury by handling objects or hand tools	
	965	Superficial injury from striking or stepping on an object	
	966	Superficial injury from being struck by a falling object	
	967	Superficial injury from fall	

[2] For the categories for certain types of injuries (90-97 in terms of the summary 2-digit morbidity code), the equivalent International List numbers are:
Third digit=0=Part of I. L. 170
Third digit=1=Parts of I. L. 169, 171-173
Third digit=2=Parts of I. L. 174, 175a, 175d, 176
Third digit=3-6=Part of I. L. 195 (for summary 2-digit morbidity code 95, third digit codes 3-6 would be equivalent to 185 in many instances)
Third digit=7=I. L. 186a
Third digit=8=Parts of other I. L. numbers 169-195
Third digit=9=Parts of I. L. 164-168, 196-198.

LIST OF DIAGNOSIS CATEGORIES FOR MORBIDITY TABULATIONS—Con.

XVII. Injuries and Poisonings—Continued

Code Number		International List Number, 1938 revision
	Abrasion, contusion, or other superficial injury—Continued.	
968	Superficial injury in other accident	pt. 169–176
969	Nonaccidental superficial injury	
97	*Other injury:*	
970	Other injury in motor-vehicle accident	pt. 185–188
971	Other injury in other transportation accident	
972	Other injury in machinery accident	
973	Other injury in sports or recreation	
974	Other injury by handling objects or hand tools	pt. 195–198
975	Other injury from striking or stepping on an object	
976	Other injury from being struck by a falling object	
977	Other injury from fall	
978	Other injury in other accident	
979	Nonaccidental other injury	

XIX. Other Enumerated Conditions, Without Sickness

99	*Other enumerated conditions, without sickness:*	
990	Medical examination, negative findings	None
991	Post-operative check up, negative findings	
992	Infectious disease carrier without sickness	
993	Prophylactic inoculation without sickness	

THE DISTRIBUTION OF SELENIUM IN PLASMA AND LIVER PROTEINS AND ITS FRACTIONATION IN TRYPTIC LIVER DIGESTS[1]

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Previous work from this laboratory has shown that continual ingestion of selenium occurring naturally in certain cereals results in considerable storage of selenium in the tissues of the body, apparently for the most part in combination with the tissue proteins (*1*). The chemical nature of the selenium in such combination is not known. Under suitable conditions considerable amounts of selenium can be split off from tissue proteins with bromine in hydrobromic acid at room temperature (*1*). In like manner, selenium is removable almost quantitatively from grain proteins with either bromine in hydrobromic acid or hydrogen peroxide (*2*). This, however, gives little clue as to its chemical nature for it appears probable that with these procedures the selenium separates out as a degradation inorganic product.

More recently it has been observed in this laboratory that the toxicity of naturally occurring food selenium is related in an interesting

[1] From the Division of Pharmacology, National Institute of Health.

manner to the dietary proteins (*3*). It has been found that within certain limits the toxicity of food selenium is correlated not so much with the level of intake as with the protein-selenium ratio of the diet. A given level of intake which is highly toxic when fed as part of a low-protein diet may have scarcely any demonstrable effect when fed in a suitably constituted high-protein diet. This, with the accumulating evidence that the relationship applies to ingested inorganic selenium (unpublished data and (*4*, *5*, *6*)) as well, raises many questions. The mechanism of the protective influence is not completely understood at present, and it seemed probable that further knowledge of the metabolism of selenium in the body tissues might give information of value in solving this problem.

These considerations led us to undertake experiments in order to ascertain more definitely the manner of distribution of selenium in, and association with, the known tissue proteins. Experiments are also described which were designed to release the selenium compound or compounds from the proteins, with attempts to characterize the material so obtained insofar as it might be related in its properties to some of the amino acids.

EXPERIMENTAL

All the selenium-bearing tissues used in this work were obtained, with one exception (rats D37, table 6), from rabbits which had been fed for several months on selenized oats or selenized wheat as previously described (*7*). The animals were bled from the carotid artery under ether anesthesia as completely as possible and the oxalated plasma was separated by centrifugation. The livers were removed at once, in a few instances after brief perfusion with normal saline, weighed, ground in a mortar, and extracted with 5 percent solution of $MgSO_4$, or digested in a suitable medium as described below. In two experiments (68 and 110, table 3) the livers were frozen with liquid air immediately upon removal.

The digestion experiments were carried out for 20 to 24 hours at 38° C. with the finely divided liver, usually weighing 50–60 gm., suspended in about 200 cc. of water containing 1 gm. of trypsin in solution made slightly alkaline with Na_2CO_3 to pH 7.4–8.0. One or 2 cc. of toluene were used as a preservative. In the few instances in which peptic digestion was tried, a similar procedure was used, with 1 gm. of pepsin in dilute HCl adjusted to pH 2.0–2.4. At the end of the digestion period acetic acid (or sodium acetate) was added to pH 4.0 and sufficient trichloracetic acid to make a 10 percent solution. The protein-free solution was then separated from the undigested residue by filtration and washing. The selenium content of the various fractions was determined by the method previously described (*8*).

SELENIUM IN THE PLASMA PROTEINS

The plasma proteins were separated by Howe's method into fibrinogen, euglobulin, pseudoglobulin I, pseudoglobulin II, and albumin (*9*). The selenium in the filtrate from the last fraction was considered as nonprotein. The results of four such experiments are shown in table 1. If we consider the three globulin fractions, euglobulin and pseudoglobulin I and II, under one head as combined globulins it appears that the plasma selenium distributes itself more or less evenly among the three major proteins, fibrinogen, combined globulins, and albumin. The nonprotein selenium, in agreement with previous experiments (*1*), is slight. On the assumption that the fibrinogen nitrogen in the plasma has a normal value and is but a small fraction of the other nitrogenous constituents, it would appear that selenium has a greater though not an exclusive predilective affinity for this protein.

TABLE 1.—*Distribution of selenium in plasma proteins, fractionated by P. E. Howe's method*

Number of experiment	65	85	110	68
Total blood selenium, micrograms percent	260	320	250	
Selenium in erythrocytes, percent of total	60	47	42	
Plasma selenium, percent of total	40	53	58	
Percent of total plasma selenium in:				
Fibrinogen	29	42	42	31
Combined globulins	32	26	24	38
Euglobulin	18	11		
Pseudoglobulin I	7	6		
Pseudoglobulin II	7	9		
Albumin	32	26	26	31
Nonprotein	7	6	8	trace

SELENIUM IN THE LIVER PROTEINS

The ground livers were extracted three times by stirring for 1 hour at 5° C. with successive portions of 6, 2, and 2 cc. of 5 percent $MgSO_4$ solution per gram of liver and were separated by centrifugation. The selenium content of the insoluble residue and an aliquot of the "extract" was determined. The bulk of the extract was then fractionated in one series of experiments by the method of Halliburton (*10*), and in another by the method of Luck (*11*). The extractable selenium in the whole series of eight experiments, summarized in tables 2 and 3, varied from about 45 to nearly 90 percent of the total selenium in the liver. The nonprotein selenium fraction in this series, as in preceding experiments on the plasma, was relatively low. By far the greater part of the selenium in the extractable proteins was found in the α globulin and nucleo-albumin fractions of Halliburton and in the combined globulin II and euglobulin fractions of Luck. The albumin fractions by either method contained relatively little selenium. Though it is not possible definitely to correlate the protein

fractions as obtained by the two methods, we may assume that the α globulin and nucleo-albumin fractions of Halliburton represent nearly the equivalent of Luck's three globulins. On this basis we have shown in table 4 the selenium distribution in the liver proteins as determined by the two methods. About three-fourths of the total extractable selenium is thus found in the combined globulins and the remaining one-fourth is divided between the albumin and the "undetermined" fractions, the latter consisting of a small fraction removable by trichloracetic acid and the nonprotein fraction. It seems probable that in the Halliburton method all of the albumin selenium does not separate out at 72° C. and some of it goes over into the trichloracetic acid fraction.

TABLE 2.—*Distribution of selenium in liver proteins, fractionation by the method of W. D. Halliburton*

Number of experiment	39	60	65
Total liver selenium, micrograms	290	355	660
Selenium in insoluble residue, percent of total	31	54	43
Selenium in soluble fraction, percent of total	69	46	57
Percent of total soluble selenium in:			
α Globulin (47° C.)	50	28	36
Nucleo albumin (57° C.)	30	34	39
Albumin+β globulin (72° C.)	5	7	8
Undetermined	15		
Trichloracetic acid precipitate		14	8
Nonprotein		17	9

TABLE 3.—*Distribution of selenium in liver proteins, fractionation by the method of J. M. Luck*

Number of experiment	41	78	79	68 [1]	110 [1]
Total liver selenium, micrograms	750	740	545	575	805
Selenium in insoluble residue, percent of total	40	43	17	12	29
Selenium in soluble fraction, percent of total	60	57	83	88	71
Percent of total soluble selenium in—					
Globulin II	48	51	58	14	40
Euglobulin	16	20	19	45	37
Pseudoglobulin	4	5	3	12	4
Albumin	14	12	16	25	17
Undetermined	18		4		
Trichloracetic acid precipitate		4		0	0
Nonprotein		8		4	2

[1] Liver frozen with liquid air.

TABLE 4.—*Selenium distribution in liver proteins as between globulins, albumin, and the undetermined fraction*

	Combined globulins	Albumin	Undetermined
Method of Halliburton:			
Exp. 39	80	5	15
Exp. 60	62	7	31
Exp. 65	75	8	17
Method of Luck:			
Exp. 41	68	14	18
Exp. 78	76	12	12
Exp. 79	80	16	4
Exp. 68	71	25	4
Exp. 110	81	17	2

In his fractionation experiments on rat livers Luck (*11*) found an average of 5.0 gm. globulin II, 4.6 gm. euglobulin, 1.1 gm. pseudoglobulin, and 0.9 gm. albumin per 100 gm. of liver. Assuming that the protein distribution of his animals parallels these, it would appear that the selenium distribution in the liver proteins generally parallels that of the nitrogen. An exception to this appears to be in the insoluble residue which in our experiments contained as much as 43 percent of the total liver selenium, while in Luck's experiments it contained less than 10 percent of the total liver protein.

SELENIUM FREED FROM PROTEIN COMBINATION BY TRYPTIC DIGESTION

Digestion of selenized livers with trypsin at pH 7.2 to 8.0 for about 20 hours at 38° C. sets free about 80 percent of the selenium from its protein combination. On the average about 20 percent of the liver selenium remains with the undigested residue, and this cannot be released by further digestion. Various procedures of adsorption and precipitation were tried in an attempt to remove the selenium from the protein-free filtrate of the liver digests with only partial or no success. These experiments are summarized in table 5.[2] Precipitation of the digests with phosphotungstic acid or silver nitrate failed to remove any selenium. Procedures 8, 9, and 10 which effected some separation of selenium are probably sufficiently drastic to cause degradation of the organic compound or compounds to inorganic selenium.

TABLE 5.—*The liberation of selenium from selenized livers by tryptic digestion and attempts to remove it from the protein-free filtrate*

Average percent of total liver selenium in protein residue after tryptic digestion, 13 experiments (Max. 36; min. 12; std. dev.=7.9)	22
Average percent of total liver selenium in protein-free filtrate	78
Procedures tried for removal of selenium from protein-free filtrate	**Percent of total selenium removed**
Adsorption on Norite or fuller's earth from acid or neutral solutions	trace
Precipitation with digitonin	0
Precipitation with tannic acid	0
Precipitation with uranium acetate	0
Precipitation with picric or picrolonic acid	0
Precipitation with phosphotungstic acid in HCl	0
Precipitation with $AgNO_3$, pH 4.0 to 8.0	trace
Precipitation with cuprous oxide and H_2SO_4:	
Without reduction	trace
With reduction	55
Precipitation with mercuric acetate (all is removed when sodium selenite, selenate or diselenodiacetic acid is added to control protein-free filtrate)	50
Electrolysis in acid solution (80 percent is removed when sodium selenite, selenocystine, or diselenodiacetic acid is added to control protein-free filtrate)	40

Having failed to remove the selenium from the protein-free digests by methods commonly used for the separation of certain amino acids,

[2] Butyl alcohol continuous extraction which is often used to remove monoamino monocarboxylic acids from protein hydrolysates (*12, 13*) removes considerable selenium. This is being investigated further.

a more or less empirical procedure of fractionation was adopted. For comparison the behavior of sodium selenite, sodium selenate, and two organic selenium compounds, diselenodiacetic acid and seleno-cystine (*14*) [3] was studied by adding them to normal livers which were subjected to tryptic digestion in the usual manner and subsequent fractionation. The fractionation procedure was, briefly, as follows: The trichloracetic acid filtrate was treated with lead acetate to remove polypeptides and other products of partial digestion; the lead after filtration was removed with Na_2SO_4, and the sulfate with a slight excess of $BaCl_2$. The clear filtrate (pH about 2.0) was distilled *in vacuo* to about 1/10 volume and treated with ethyl alcohol to make 90 percent by volume. The precipitate was filtered off and NaOH added to the filtrate to pH 7.0. A second precipitate formed which was filtered off. The filtrate was distilled *in vacuo* to remove the alcohol and the small aqueous residue plus 0.5 cc. of 12 percent $BaCl_2$ treated with 10 volumes acetone. A gel-like precipitate formed on standing in the cold room, which was separated from the solution by filtration.

TABLE 6.—*Distribution of selenium in tryptic liver digests*

	Chronic selenosis					Added selenium as—			
	71	D37	93	94	106	Diseleno-diacetic acid	Seleno-cystine	Sodium selenate	Sodium selenite
Total liver selenium, micrograms	460	350	900	510	585	500	500	920	500
Percent of total selenium in liver residue	22	36	25	31	34	25	46	17	92
Percent of total selenium in protein-free filtrate	78	64	75	69	66	75	54	83	8
Percent of protein-free filtrate selenium in:									
Lead acetate precipitate	0	7	2	3	13	15	4	79	(25γ)
Lead sulfate precipitate	0	5	3	trace	6	trace	7	4	0
Barium sulfate precipitate	trace	0	0	0	7	trace	3	3	0
Acid 90 percent alcohol precipitate	trace	trace	8	3	5	9	43	8	(15γ)
Neutral 90 percent alcohol precipitate	62	43	7	31	13	45	2	5	0
Acetone precipitate	33	45	80	63	52	29	41	1	0
Acetone solution	5	trace	trace	trace	4	2	0	0	0

The results of these experiments are shown in table 6. In a series of five such experiments on selenized livers little selenium separated out in any of the fractions up to the precipitate obtained from neutral 90 percent alcohol. Indeed this, together with the selenium in the succeeding acetone precipitate, accounted for about 90 percent of the total liver selenium released from protein combination by tryptic digestion.[4] By contrast, nearly all the selenium of added sodium selenite remained with the undigested liver residue, and about 80

[3] A small amount of dl seleno-cystine was obtained through the courtesy of Dr. M. X. Sullivan of Georgetown University. The compound had been prepared in Dr. Fredga's laboratory.

[4] In two experiments similarly made on a peptic digest, the results were not significantly different, though some 15 percent of the selenium in the protein-free filtrate separated out in the acid alcohol fraction, and 31 to 36 percent of the total liver selenium remained with the undigested residue.

percent of the selenium in the protein-free filtrate from added sodium selenate separated out in the lead acetate precipitate. The distribution of selenium from added selenocystine also appears significantly different from tissue digest selenium, while the distribution of selenium from added diselenodiacetic acid resembles the tissue selenium quite closely. On the basis of these observations it appears that tissue selenium behaves similarly to the dicarboxylic acid, though this does not necessarily prove their chemical similarity.

The greater stability of the tissue selenium compound compared with selenocystine [5] and its somewhat different distribution suggested the desirability of studying the distribution of cystine in tryptic liver digests when subjected to a similar procedure of fractionation. We were aware from the work of Jones (*15*) that much of the cystine in casein is destroyed by alkaline tryptic digestion. Nevertheless, it seemed of interest to determine the path of distribution of the cystine fraction escaping destruction. Accordingly, several experiments were made in which selenized livers were digested and the digests fractionated as outlined above, and the cystine content of the various fractions was determined by the method of Sullivan (*16*) as used by Rossouw and Wilken-Jorden (*17*).

The following are typical experiments. A selenized rabbit liver weighing 57 grams was digested with trypsin in the usual manner. Assuming equal distribution of cystine throughout the liver, analysis of a portion of the liver indicated that the portion digested plus the small amount of cystine in the trypsin contained 153 milligrams of cystine. Analysis of the several fractions revealed 9 milligrams of cystine in the undigested residue, 0.2 milligrams in the lead acetate precipitate, and 2.4 milligrams in the acid alcohol fraction. There was no cystine in any of the other fractions. It follows from this that only 8 percent of the total liver cystine escaped destruction, and nearly all of the cystine of the protein-free filtrate was found in the acid alcohol fraction, where it separated out probably as the barium salt.

In another experiment on a selenized liver subjected to peptic digestion and subsequent fractionation the several fractions gave the following values for cystine and selenium:

	Percent of total in protein-free filtrate	
Fraction	*Cystine*	*Selenium*
Lead acetate	13	10
Lead sulfate	trace	7
Barium sulfate	trace	7
Acid alcohol precipitate	87	15
Neutral alcohol precipitate	trace	15
Acetone precipitate	0	47
Acetone solution	0	trace

[5] This compound is considerably less stable than its sulfur analog. (Unpublished observations; see also Fredga (*14*).)

The cystine content in the protein-free filtrate in this case was about 14 percent of the estimated total liver cystine.

Tentatively taking the above-mentioned resemblance to diselenodiacetic acid as one bit of evidence, this appears to be additional evidence against the assumption that tissue selenium is chemically or physically closely associated with cystine. However, in view of the finding that so much of the cystine appears to be destroyed, this statement is made with due reservations.

The ninhydrin test applied to the various fractions in one experiment gave a positive reaction with the acid and neutral alcohol precipitates, and a doubtful or negative reaction with the acetone precipitate which, as shown in table 6, often contains most of the selenium.

Though our experiments give no conclusive proof, they suggest that the selenium compound (or compounds) released from the tissues by tryptic or peptic digestion is not necessarily related to cystine and it does not have the characteristics of the histone bases. Its distribution by the fractionation procedure described herein suggests that it might have the properties of a dicarboxylic acid after its release but it is not certain that it exists as such in the tissues. We have no data on the nature of the selenium remaining in the residue after digestion. In this connection Horn, Nelson, and Jones (*18*) found that the selenium in a sulfuric acid hydrolysate of selenized wheat protein was not associated with the dicarboxylic amino acids or histone bases but was in what might be termed the leucine fraction.

SUMMARY

The distribution of selenium in plasma and liver proteins of chronically poisoned animals has been studied. Selenium has been found to occur in all the proteins examined, though predominantly in the globulins.

Tryptic (and also peptic) digestion of the selenized liver releases about 80 percent of the selenium from its protein combination. The selenium compound (or compounds) is not removable by procedures commonly employed for the removal of the histone bases from protein hydrolysates.

A procedure adopted for the fractionation of the protein-free liver digest shows that the separation of the selenium compound (or compounds) does not parallel that of the cystine.

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THE RELATIVE TOXICITY OF LEAD AND SOME OF ITS COMMON COMPOUNDS[1]

A REVIEW

This investigation was undertaken because of the lack of definite information with regard to the comparative toxic properties of various lead compounds. A study was made of lead poisoning following the administration of lead compounds by mouth, by intraperitoneal injection, and by inhalation. The lead compounds studied in addition to metallic lead were the arsenate, carbonate, chromate, monoxide,

[1] Public Health Bulletin No. 253. The Relative Toxicity of Lead and Some of its Common Compounds. By Lawrence T. Fairhall and R. R. Sayers. With a section on pathology by J. W. Miller. Government Printing Office, Washington, 1940. Available from the Superintendent of Documents, Washington, D. C., at 25 cents per copy.

dioxide, tetroxide, phosphate, sulfate, silicate, and sulfide. Symptoms of lead poisoning were sought; body weight changes and mortality figures were collected; blood changes were studied; and the distribution of lead in the various tissues such as the liver, kidney, and bones was determined by analytical means in order to find the degree of lead absorption that had occurred. The lead content of the lungs of those animals exposed by inhalation was found and particle size of suspended lead fume or dust as well as the total lead content of the dusty air was determined for these groups.

Lead (and most of its compounds) was shown to be more toxic by inhalation than either by ingestion or intraperitoneal injection. Lead arsenate was shown to be particularly toxic on intraperitoneal injection. Lead carbonate, lead monoxide, and lead sulfate were shown to be more toxic by mouth and lead carbonate and lead monoxide were more toxic following inhalation than the remaining lead compounds. The pathological changes associated with this degree of lead absorption were studied in detail. It was found that splenic hemosiderosis is a fair pathological index of lead intoxication and that the amount of hemosiderosis in the spleen closely follows the relative toxicity described above. Greater pathological differences were noted between the various lead compounds on intraperitoneal injection than were noted by ingestion and inhalation. The behavior of the lead compounds in the peritoneal tissue indicates that the compounds are but slowly absorbed and that during the process the nodules have the appearance of those produced by the inert group of mineral dusts.

COURT DECISION ON PUBLIC HEALTH

Provisions of city ordinance, fixing hours for operation of barber shops and granting power to city health director relative thereto, held invalid.—(Pennsylvania Superior Court; *Kellerman et al.* v. *City of Philadelphia et al.*, 13 A.2d 84; decided April 18, 1940.) A section of an ordinance of the city of Philadelphia regulating barbering fixed the hours during which barber shops could remain open for business. There was a proviso that "the director of public health, upon application of the proprietor of any barber shop and proof that barber service to the public so requires, may issue a permit for the operation of a particular barber shop at such hours beyond those above prescribed as in the opinion of the * * * director * * * public necessity may require." In a suit to enjoin the enforcement of those provisions restricting the hours of business the superior court held that the above-mentioned proviso contained an unlawful delegation of legislative power. The court observed that the standard erected for the guidance of the director in the exercise of his discretion to suspend the provisions of

the ordinance was "public necessity" as "in the opinion" of that officer it may appear. This, it was the court's view, was not a sufficient standard to guide properly his determinations. "He is entrusted," said the court, "with purely discretionary powers. The term 'public necessity' has no other meaning than that which may be attributed to it by him in his 'unfettered and uncontrolled' judgment upon each application." Further, the court was of the opinion that the entire section was invalid, it being pointed out that the right of the city to pass an ordinance fixing the days and hours during which barber shops could be open was granted by an act of the legislature on the express condition that the proviso in question should be contained in the ordinance.

DEATHS DURING WEEK ENDED AUGUST 17, 1940

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

	Week ended Aug. 17, 1940	Corresponding week, 1939
Data from 88 large cities of the United States:		
Total deaths	6,948	7,239
Average for 3 prior years	7,426	
Total deaths, first 33 weeks of year	285,680	280,216
Deaths under 1 year of age	450	478
Average for 3 prior years	521	
Deaths under 1 year of age, first 33 weeks of year	16,621	16,753
Data from industrial insurance companies:		
Policies in force	64,932,518	66,825,741
Number of death claims	12,001	10,794
Death claims per 1,000 policies in force, annual rate	9.7	8.4
Death claims per 1,000 policies, first 33 weeks of year, annual rate	10.0	10.5

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

REPORTS FROM STATES FOR WEEK ENDED AUGUST 24, 1940

Summary

Of the 9 communicable diseases reported in the following weekly table, the incidence of only 3—influenza, measles, and poliomyelitis—was above the 5-year (1935–39) median expectancy.

A total of 623 cases of poliomyelitis was reported, as compared with 389 for the preceding week and with a 5-year median of 391. This represents an increase of 60 percent during the current week, as compared with a 41 percent increase for each of the preceding 2 weeks. All geographic areas except the New England, East South Central, and the Pacific States shared in this increased incidence.

The largest numbers of cases and the largest numerical increases occurred in the States of the two North Central areas. These States, with approximately 30 percent of the total population, reported 418 cases, or 67 percent of the total number of cases reported for the current week. The individual States in these areas reporting the largest numbers of cases (with last week's figures in parentheses) are as follows: Michigan 98 (41), Indiana 79 (58), Iowa 73 (25), Ohio 46 (36), Kansas 42 (30), and Illinois 21 (7). In the South Atlantic States, West Virginia reported 46 cases as compared with 31 last week.

The incidence of poliomyelitis remained below the 5-year median from the week of June 15 to the week of August 3. For the 3 weeks ended August 10, 17, and 24, respectively, it has been above the median expectancy.

In 5 of the past 10 years the peak week of poliomyelitis in the United States has come in September. The earliest was the third week of June (1934), and the latest was the first week of October (1930 and 1936). In both 1935 and 1938 the largest numbers of cases were reported for the fourth week of August.

For the current week the Bureau of the Census reports 7,063 deaths in 88 major cities of the United States, as compared with 6,948 for the preceding week and with a 3-year (1937–39) average of 7,064 for the corresponding week.

Telegraphic morbidity reports from State health officers for the week ended August 24, 1940, and comparison with corresponding week of 1939 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39
	Aug. 24, 1940	Aug. 26, 1939		Aug. 24, 1940	Aug. 26, 1939		Aug. 24, 1940	Aug. 26, 1939		Aug. 24, 1940	Aug. 26, 1939	
NEW ENG.												
Maine	1	0	0	-------	-------	-------	2	6	7	0	0	0
New Hampshire	0	0	0	-------	-------	-------	0	0	0	0	0	0
Vermont	0	0	0	-------	-------	-------	1	16	7	0	0	0
Massachusetts	1	4	2	-------	-------	-------	70	33	33	2	0	0
Rhode Island	0	0	0	-------	-------	-------	10	11	4	0	0	0
Connecticut	0	0	0	-------	-------	-------	4	9	9	0	0	0
MID. ATL.												
New York	7	8	10	[1]4	[1]2	[1]2	138	64	93	2	2	3
New Jersey [2]	5	0	6	-------	2	6	60	10	32	0	1	1
Pennsylvania	2	13	18	-------	-------	-------	107	28	39	1	4	2
E. NO. CEN.												
Ohio	12	8	11	8	2	2	15	14	17	2	1	1
Indiana [2]	0	5	9	-------	3	5	2	3	4	0	0	0
Illinois [2]	8	15	15	-------	4	4	35	12	32	2	1	3
Michigan [2]	5	13	6	6	1	1	83	0	24	1	0	0
Wisconsin	0	4	1	11	29	20	82	24	24	1	0	1
W. NO. CEN.												
Minnesota	0	3	1	5	1	1	2	23	2	0	0	0
Iowa [2]	5	2	2	3	-------	-------	7	8	3	2	0	1
Missouri [2]	9	9	6	1	1	8	3	1	2	2	0	1
North Dakota	8	2	2	-------	-------	-------	0	1	1	1	0	0
South Dakota	0	4	0	-------	-------	-------	0	1	0	0	0	0
Nebraska	0	2	2	-------	-------	-------	1	1	3	1	0	0
Kansas	6	3	3	2	1	1	9	11	6	1	1	1
SO. ATL.												
Delaware	0	0	0	-------	-------	-------	0	2	1	0	0	0
Maryland [2,3]	8	0	3	3	-------	-------	3	3	10	0	1	1
Dist. of Col. [2]	1	2	2	-------	1	-------	2	2	2	0	0	1
Virginia [2]	2	18	21	83	21	-------	27	5	15	0	0	1
West Virginia [2]	1	3	10	13	8	10	1	1	4	1	0	1
North Carolina [2]	9	31	31	-------	-------	-------	4	5	5	0	1	1
South Carolina [4]	8	9	9	129	143	80	16	4	4	0	1	0
Georgia [2,4]	10	40	22	1	1	-------	0	2	0	0	0	0
Florida [4]	3	3	3	1	3	1	2	2	4	[1]0	0	0
E. SO. CEN.												
Kentucky	7	17	15	-------	3	3	15	2	4	0	0	0
Tennessee [4]	2	6	14	6	18	12	23	7	7	1	0	1
Alabama [4]	10	17	17	1	6	5	26	17	5	2	1	1
Mississippi [3,4]	3	19	16	-------	-------	-------	-------	0	-------	0	0	0
W. SO. CEN.												
Arkansas	3	8	11	1	15	5	10	5	4	0	0	0
Louisiana [4]	10	5	10	2	7	7	2	1	2	3	0	1
Oklahoma	2	7	8	20	10	10	3	3	4	0	2	0
Texas [4]	11	23	25	61	36	36	24	16	15	1	1	1
MOUNTAIN												
Montana	2	1	1	-------	9	-------	5	6	4	0	1	0
Idaho	0	0	0	-------	-------	1	0	1	2	0	0	0
Wyoming	0	0	0	-------	-------	-------	3	3	1	0	0	0
Colorado	7	10	7	2	2	-------	5	3	3	0	1	1
New Mexico	2	1	2	1	-------	-------	1	0	5	0	1	1
Arizona	1	6	2	12	15	11	12	3	3	0	0	0
Utah [2,3]	1	0	1	-------	3	-------	9	6	6	0	1	0
PACIFIC												
Washington	0	1	2	-------	-------	-------	9	26	17	0	0	0
Oregon	1	3	1	4	1	3	15	9	7	2	0	0
California	8	17	19	4	8	11	31	49	49	0	0	2
Total	181	342	342	384	356	286	879	459	733	28	21	51
34 weeks	9,046	12,310	14,940	169,606	152,006	141,878	229,371	348,906	348,906	1,145	1,408	4,221

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended August 24, 1940, and comparison with corresponding week of 1939 and 5-year median—Continued

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39	Week ended		Median, 1935–39
	Aug. 24, 1940	Aug. 26, 1939		Aug. 24, 1940	Aug. 26, 1939		Aug. 24, 1940	Aug. 26, 1939		Aug. 24, 1940	Aug. 26, 1939	
NEW ENG.												
Maine	0	0	0	1	2	2	0	0	0	0	1	2
New Hampshire	0	0	0	0	0	0	0	0	0	1	0	0
Vermont	0	0	1	1	3	1	0	0	0	1	0	0
Massachusetts	4	2	4	21	12	25	0	0	0	1	4	3
Rhode Island	1	0	1	0	0	2	0	0	0	1	2	1
Connecticut	0	0	1	2	5	6	0	0	0	3	4	2
MID. ATL.												
New York	14	60	60	57	54	67	0	0	0	18	14	22
New Jersey [2]	4	20	8	18	15	17	0	0	0	8	7	9
Pennsylvania	7	10	10	31	30	78	0	0	0	15	12	25
E. NO. CEN.												
Ohio	46	2	4	48	43	48	0	3	0	18	15	17
Indiana [2]	79	0	1	17	21	21	1	0	1	1	5	8
Illinois [2]	21	14	14	43	51	52	0	8	1	12	23	28
Michigan [3]	98	115	31	30	37	40	1	0	0	4	7	13
Wisconsin	12	6	8	38	39	39	2	3	0	0	9	2
W. NO. CEN.												
Minnesota	8	38	3	14	16	16	2	0	0	0	4	3
Iowa [2]	73	1	1	14	10	16	1	3	2	8	28	4
Missouri [2]	18	2	2	14	15	21	0	0	0	20	26	23
North Dakota	2	2	0	0	4	9	1	2	1	0	5	1
South Dakota	4	3	2	1	8	7	0	2	0	0	3	1
Nebraska	15	0	1	3	5	3	0	0	0	1	1	1
Kansas	42	1	0	20	19	18	0	2	0	5	6	8
SO. ATL.												
Delaware	0	0	0	2	0	0	0	0	0	1	0	1
Maryland [2 3]	1	1	1	3	7	7	0	0	0	6	7	18
Dist. of Col. [2]	0	1	2	3	5	5	0	0	0	5	1	3
Virginia [2]	6	1	4	12	24	11	0	0	0	5	20	20
West Virginia [3]	46	0	0	20	24	24	0	0	0	6	6	16
North Carolina [2]	4	9	4	13	24	16	0	1	0	8	14	21
South Carolina [4]	0	16	1	5	5	2	2	0	0	24	7	14
Georgia [2 4]	0	4	2	6	8	10	0	1	0	19	28	28
Florida [4]	2	2	1	3	2	2	0	0	0	3	3	1
E. SO. CEN.												
Kentucky	18	1	4	13	27	20	0	0	0	15	30	49
Tennessee [4]	1	2	5	10	16	15	0	0	0	21	15	32
Alabama [4]	0	1	1	14	26	9	0	0	0	13	17	19
Mississippi [2 4]	5	1	1	5	4	5	0	0	0	11	15	8
W. SO. CEN.												
Arkansas	1	1	1	4	9	8	0	0	0	26	22	22
Louisiana [4]	10	1	2	2	10	2	0	0	0	25	29	23
Oklahoma	14	1	1	7	5	5	1	2	0	25	24	24
Texas [4]	14	10	4	14	25	23	0	0	0	59	28	50
MOUNTAIN												
Montana	15	0	1	2	6	6	0	0	2	0	1	2
Idaho	2	0	0	2	1	5	0	1	1	0	1	1
Wyoming	0	0	0	2	3	3	0	0	0	4	2	0
Colorado	2	3	0	5	7	8	2	1	1	3	1	5
New Mexico	2	3	0	2	3	2	0	0	0	4	1	4
Arizona	1	3	0	1	1	1	0	1	0	0	5	5
Utah [2 3]	4	2	1	5	14	12	0	0	0	1	6	2
PACIFIC												
Washington	13	1	2	14	6	10	0	0	4	0	4	4
Oregon	1	1	0	5	2	7	0	0	1	2	6	4
California	13	50	24	41	44	59	0	4	2	9	10	10
Total	623	391	391	588	697	804	13	34	34	412	479	584
34 weeks	2,682	2,539	2,539	119,475	117,179	165,702	1,971	8,691	8,046	5,405	7,584	8,725

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended August 24, 1940, and comparison with corresponding week of 1939 and 5-year median—Continued

Division and State	Whooping cough	
	Week ended—	
	Aug. 24, 1940	Aug. 26, 1939
NEW ENG.		
Maine	16	29
New Hampshire	0	0
Vermont	0	54
Massachusetts	116	95
Rhode Island	7	24
Connecticut	38	75
MID. ATL.		
New York	247	359
New Jersey [1]	112	109
Pennsylvania	400	232
E. NO. CEN.		
Ohio	263	147
Indiana [1]	11	50
Illinois [1]	156	205
Michigan [3]	215	181
Wisconsin	102	149
W. NO. CEN.		
Minnesota	40	42
Iowa [1]	22	13
Missouri [3]	42	30
North Dakota	21	31
South Dakota	3	3
Nebraska	3	4
Kansas	26	25
SO. ATL.		
Delaware	0	3
Maryland [2 3]	90	56
Dist. of Col. [3]	6	35
Virginia [1]	59	57
West Virginia [3]	62	7
North Carolina [1]	82	114
South Carolina [4]	25	18
Georgia [2 4]	11	6
Florida [4]	1	6
E. SO. CEN.		
Kentucky	66	40
Tennessee [4]	30	42
Alabama [4]	55	45
Mississippi	----------	----------
W. SO. CEN.		
Arkansas	18	6
Louisiana [4]	57	3
Oklahoma	8	6
Texas [4]	188	59
MOUNTAIN		
Montana	9	2
Idaho	8	3
Wyoming	0	0
Colorado	13	10
New Mexico	4	6
Arizona	5	60
Utah [2 3]	26	50
PACIFIC		
Washington	23	14
Oregon	21	12
California	258	90
Total	2,965	2,607
34 weeks	110,137	129,238

[1] New York City only.
[2] Rocky Mountain spotted fever, week ended August 24, 1940, 20 cases as follows: New Jersey, 1; Indiana, 1; Illinois, 2; Iowa, 2; Missouri, 2; Maryland, 2; District of Columbia, 1; Virginia, 4; North Carolina, 3; Georgia, 1; Utah, 1.
[3] Period ended earlier than Saturday.
[4] Typhus fever, week ended August 24, 1940, 39 cases as follows: South Carolina, 2; Georgia, 8; Florida, 4; Tennessee, 1; Alabama, 8; Mississippi, 1; Louisiana, 4; Texas, 11.

PLAGUE INFECTION IN FLEAS FROM GROUND SQUIRRELS IN SAN BERNARDINO COUNTY, CALIF.

Under date of August 13, 1940, Dr. Harlan L. Wynne, of the Department of Public Health of California, reported plague infection proved in a pool of 129 fleas from 15 ground squirrels (*C. fisheri*) submitted to the laboratory on July 15 from Arrowhead Dump, 1 mile east of Lake Arrowhead, San Bernardino County, Calif.

WEEKLY REPORTS FROM CITIES

City reports for week ended August 10, 1940

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.

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								
Data for 90 cities:											
5-year average	82	26	11	342	266	246	3	347	73	1,334	----
Current week [1]	33	22	9	631	229	178	1	299	60	1,123	----
Maine:											
Portland	0	----	0	1	3	0	0	0	0	8	18
New Hampshire:											
Concord	0	----	0	0	0	0	0	0	0	0	18
Manchester	0	----	0	0	0	0	0	0	0	0	13
Nashua	0	----	0	0	0	0	0	0	0	0	6
Vermont:											
Barre	0	----	0	0	0	0	0	0	0	0	1
Burlington	0	----	0	0	0	0	0	0	0	0	8
Rutland	0	----	0	0	0	0	0	1	0	0	4
Massachusetts:											
Boston	1	----	0	27	5	6	0	7	1	38	192
Fall River	0	----	0	5	0	0	0	1	0	3	17
Springfield	0	----	0	2	1	1	0	0	0	0	35
Worcester	0	----	0	37	2	1	0	1	0	14	46
Rhode Island:											
Pawtucket	0	----	0	0	0	0	0	0	0	0	15
Providence	0	----	0	11	2	0	0	0	0	1	46
Connecticut:											
Bridgeport	0	----	0	0	1	0	0	1	0	2	29
Hartford	0	----	0	3	0	0	0	0	0	2	35
New Haven	0	----	0	1	0	1	0	0	2	5	33
New York:											
Buffalo	0	----	0	2	7	6	0	5	1	8	133
New York	7	1	0	100	45	22	0	65	6	122	1,123
Rochester	0	----	0	0	2	1	0	0	0	12	73
Syracuse	0	----	0	1	3	0	0	0	0	21	48
New Jersey:											
Camden	0	----	0	0	0	7	0	0	0	0	26
Newark	0	1	0	34	0	3	0	9	1	15	80
Trenton	0	----	0	2	4	0	0	0	2	0	36
Pennsylvania:											
Philadelphia	0	----	0	55	11	9	0	16	3	49	402
Pittsburgh	3	2	2	0	9	6	0	5	2	31	134
Reading	0	----	0	1	0	0	0	3	0	22	26
Scranton	0	----	----	0	----	0	0	----	0	0	----
Ohio:											
Cincinnati	0	----	0	0	2	1	0	1	0	14	127
Cleveland	0	3	1	2	4	5	0	4	1	62	150
Columbus	0	----	0	1	2	2	0	0	0	6	74
Indiana:											
Anderson	0	----	0	1	0	1	0	0	1	1	9
Fort Wayne	0	----	0	0	1	0	0	0	1	4	20
Indianapolis	1	----	1	1	4	2	0	1	3	10	71
Muncie	0	----	0	0	1	0	0	0	0	4	10
South Bend	0	----	0	0	1	0	0	1	0	0	13
Terre Haute	1	----	0	0	0	0	0	0	0	0	17
Illinois:											
Alton	0	----	0	0	0	0	0	0	1	1	7
Chicago	1	1	1	23	10	31	0	38	4	77	597
Elgin	0	----	0	0	0	0	0	0	0	3	6
Springfield	0	----	0	0	1	0	0	0	0	0	17
Michigan:											
Detroit	1	----	0	101	4	15	0	13	1	140	227
Flint	0	----	0	0	0	3	0	0	0	1	24
Grand Rapids	0	----	0	2	0	1	0	1	1	23	23
Wisconsin:											
Kenosha	0	----	0	0	0	0	0	0	0	0	7
Madison	0	----	0	0	0	1	0	0	0	4	14
Milwaukee	----	----	----	----	----	----	----	----	----	----	----
Racine	0	----	0	0	0	1	0	0	0	0	12
Superior	0	----	0	0	0	2	0	0	0	0	5
Minnesota:											
Duluth	0	----	0	1	0	2	1	0	0	3	22
Minneapolis	0	----	0	1	2	6	0	0	0	13	74
St. Paul	0	----	0	1	3	1	0	0	0	7	56

[1] Figures for Milwaukee estimated; report not received.

City reports for week ended August 10, 1940—Continued

State and city	Diphtheria cases	Influenza cases	Influenza deaths	Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
Iowa:											
Cedar Rapids	0	----	----	0	----	0	0	----	0	2	----
Davenport	0	----	----	0	----	2	0	----	0	0	----
Des Moines	0	----	0	0	0	0	0	0	0	0	24
Sioux City	0	----	----	0	----	1	0	----	0	0	----
Waterloo	0	----	----	1	----	2	0	----	0	0	----
Missouri:											
Kansas City	0	----	0	2	5	1	0	3	1	3	76
St. Joseph	0	----	0	0	5	0	0	0	0	0	32
St. Louis	0	----	0	0	12	4	0	7	5	28	189
North Dakota:											
Fargo	0	----	0	0	1	0	0	0	0	1	8
Grand Forks	0	----	----	0	----	0	0	----	0	0	----
Minot	0	----	0	0	0	0	0	0	0	1	12
South Dakota:											
Aberdeen	0	----	----	0	----	0	0	----	0	6	----
Sioux Falls	0	----	0	0	0	0	0	0	0	0	6
Nebraska:											
Lincoln	1	----	----	1	----	0	0	----	0	1	----
Omaha	0	----	0	0	2	0	0	1	1	1	45
Kansas:											
Lawrence	0	----	0	0	0	0	0	0	0	0	3
Topeka	0	----	0	3	1	0	0	1	0	1	18
Wichita	0	----	0	0	2	2	0	0	0	6	36
Delaware:											
Wilmington	0	----	0	0	1	0	0	0	0	5	23
Maryland:											
Baltimore	0	1	0	1	4	2	0	10	1	97	194
Cumberland	0	----	0	0	1	0	0	0	0	0	9
Frederick	0	----	0	1	0	1	0	0	2	0	3
Dist. of Col.:											
Washington	1	----	0	1	4	1	0	10	2	13	103
Virginia:											
Lynchburg	1	----	0	0	0	1	0	0	0	2	6
Norfolk	0	----	0	1	1	1	0	0	0	2	13
Richmond	0	----	0	2	1	2	0	2	2	1	35
Roanoke	0	----	0	10	1	0	0	0	0	0	13
West Virginia:											
Charleston	1	----	0	0	0	0	0	2	1	3	24
Wheeling	1	----	0	0	0	0	0	0	0	7	11
North Carolina:											
Gastonia	0	----	----	0	----	0	0	----	0	1	----
Raleigh	0	----	0	0	0	0	0	0	0	6	9
Wilmington	0	----	0	0	0	0	0	1	0	0	8
Winston-Salem	0	----	0	0	0	1	0	1	1	8	14
South Carolina:											
Charleston	1	----	0	1	1	0	0	0	0	0	14
Florence	0	5	0	0	1	0	0	0	0	0	14
Greenville	0	----	0	0	0	0	0	0	1	3	14
Georgia:											
Atlanta	0	1	0	0	2	0	0	10	0	2	76
Brunswick	0	----	0	0	0	0	0	0	0	0	3
Savannah	0	----	0	0	3	0	0	1	0	0	28
Florida:											
Miami	0	----	0	0	0	0	0	3	1	0	39
Tampa	0	----	1	0	1	0	0	0	0	0	21
Kentucky:											
Ashland	0	----	0	1	0	0	0	2	1	0	12
Covington	0	----	0	0	1	0	0	1	1	1	17
Lexington	0	----	0	16	1	1	0	2	0	0	13
Louisville	0	1	0	0	4	5	0	2	0	15	67
Tennessee:											
Knoxville	0	2	0	0	2	0	0	0	0	1	----
Memphis	0	----	0	0	0	0	0	4	2	5	100
Nashville	0	----	0	3	4	0	0	1	0	7	53
Alabama:											
Birmingham	0	----	0	2	5	1	0	1	1	2	48
Mobile	1	----	0	0	1	0	0	2	1	0	31
Montgomery	0	1	----	0	----	1	0	----	0	0	----
Arkansas:											
Fort Smith	0	----	----	0	----	0	0	----	0	0	----
Little Rock	0	----	0	0	1	1	0	1	0	3	----
Louisiana:											
Lake Charles	0	----	0	0	0	0	0	0	0	0	7
New Orleans	0	1	1	0	4	0	0	11	0	2	134
Shreveport	2	----	0	1	2	0	0	5	0	0	38
Oklahoma:											
Oklahoma City	0	----	0	0	4	0	0	0	0	2	44
Tulsa	0	----	0	0	1	1	0	0	0	5	27

City reports for week ended August 10, 1940—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								
Texas:											
Dallas	1		0	3	1	3	0	0	1	10	67
Forth Worth	1		0	7	3	3	0	1	0	15	45
Galveston	1		0	0	1	0	0	0	0	0	22
Houston	1		0	1	7	1	0	5	1	11	82
San Antonio	0		0	0	3	0	0	4	0	23	79
Montana:											
Billings	0		0	0	2	0	0	0	0	0	8
Great Falls	0		0	2	2	0	0	0	0	1	6
Helena	0		0	0	0	0	0	0	0	0	3
Missoula	0		0	0	0	0	0	0	0	0	3
Idaho:											
Boise	0		0	0	0	0	0	0	0	1	4
Colorado:											
Colorado Springs	0		0	0	0	2	0	1	0	0	7
Denver	5		0	1	1	2	0	4	0	6	70
Pueblo	0		0	0	1	0	0	0	0	0	5
New Mexico:											
Albuquerque	0		0	0	0	0	0	1	0	0	8
Utah:											
Salt Lake City	0		0	3	1	2	0	1	0	27	49
Washington:											
Seattle	0		1	1	4	0	0	3	0	23	81
Spokane	0		0	1	2	0	0	0	0	0	32
Tacoma	0		0	1	0	0	0	0	0	1	33
Oregon:											
Portland	0		0	0	1	0	0	0	0	8	88
Salem	0	0		0		0	0		0	1	
California:											
Los Angeles	2	9	0	12	4	7	0	19	5	78	292
Sacramento	0		0	2	0	0	0	2	3	1	19
San Francisco	0	2	1	0	6	3	0	12	1	17	175

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Maryland:			
Boston	0	0	1	Baltimore	0	0	1
Worcester	0	1	0	Virginia:			
New York:				Norfolk	0	0	3
Buffalo	2	1	0	Richmond	0	0	4
New York	1	1	4	Kentucky:			
Rochester	0	0	1	Ashland	0	0	3
Ohio:				Louisville	0	0	1
Cleveland	1	0	1	Louisiana:			
Columbus	0	0	1	New Orleans	0	0	1
Indiana:				Shreveport	0	0	1
Indianapolis	0	0	1	Texas:			
South Bend	0	0	1	Fort Worth	0	0	3
Illinois:				Montana:			
Chicago	1	0	2	Billings	0	0	1
Michigan:				Helena	0	0	1
Detroit	0	0	2	Colorado:			
Grand Rapids	0	0	1	Pueblo	0	0	1
Wisconsin:				New Mexico:			
Madison	0	0	3	Albuquerque	0	0	1
Iowa:				Washington:			
Des Moines	0	0	1	Seattle	0	0	2
Sioux City	0	0	2	Tacoma	0	0	2
Waterloo	0	0	4	Oregon:			
Missouri:				Portland	0	0	1
Kansas City	0	0	4	California:			
Kansas:				Los Angeles	0	0	3
Wichita	0	0	5	San Francisco	0	0	1

Encephalitis, epidemic or lethargic.—Cases: New York, 2; Philadelphia, 1; Cleveland, 1; St. Louis, 1; Minot, 1; Washington, D. C., 1; Oklahoma City, 2.

Pellagra.—Cases: Philadelphia, 1; Charleston, S. C., 1; Atlanta, 1; Savannah, 1; New Orleans, 1; Los Angeles, 3.

Rabies in man.—Deaths: Greenville, 1.

Typhus fever.—Cases: New York, 2; Atlanta, 1; Savannah, 3; Miami, 7 (including delayed report of 3 cases); Mobile, 2; Montgomery, 1; Houston, 1; Los Angeles, 2.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended July 20, 1940.—During the week ended July 20, 1940, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis					1					1
Chickenpox		5	5	43	156	26	14	12	20	281
Diphtheria		2		13		3	6			24
Dysentery				18	1				2	21
Influenza					3				16	19
Measles		1	1	43	86	43	203	4	31	412
Mumps				10	63	3	5		2	83
Pneumonia					24	1			4	29
Poliomyelitis								1		1
Scarlet fever		1	2	50	37	3		5	2	100
Tuberculosis	5	8	4	107	43	52	2	1		222
Typhoid and paratyphoid fever		1		8	6	1		1		17
Whooping cough		3		215	88	28	38	8	8	388

DENMARK

Notifiable diseases—January–March 1940.—During the months of January, February, and March, 1940, cases of certain notifiable diseases were reported in Denmark as follows:

Disease	January	February	March	Disease	January	February	March
Cerebrospinal meningitis	4	6	6	Measles	2,189	2,341	2,426
Chickenpox	1,374	1,120	767	Mumps	266	313	158
Diphtheria	123	77	83	Paratyphoid fever		5	23
Dysentery	17	19	16	Poliomyelitis	2		
Epidemic encephalitis	3	3		Puerperal fever	14	24	32
Erysipelas	371	271	261	Scarlet fever	844	784	676
Gastroenteritis, infectious	1,639	1,735	2,154	Syphilis	41	50	41
German measles	331	623	1,135	Tetanus, neonatorum	6	9	4
Gonorrhea	691	541	543	Typhoid fever	1		
Influenza	15,215	53,716	46,656	Undulant fever	47	44	43
Malaria	1			Weil's disease	2	1	1
				Whooping cough	2,649	1,943	1,627

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan American Sanitary Bureau, health section of the League of Nations and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths]

NOTE.—Since many of the figures in the following tables are from weekly reports, the accumulated totals are for approximate dates.

Place		January–May 1940	June 1940	July 1940—week ended—			
				6	13	20	27
AFRICA							
Union of South Africa:							
Johannesburg	C			5			
ASIA							
China: Shanghai	C		[1]5	7	8	29	43
India	C	22,493					
Bassein	C	142	22				
Calcutta	C	1,115	411	39	30	45	33
Cawnpore	C	11	5			3	
Chittagong	C	4					
Madras	C	1					
Moulmein	C		16				
Porto Novo	C	1					
Rangoon	C	36	[2]1	1	3		2
Vizagapatam	C			6	7		3
India (French)	C	34					
Indochina (French)	C	436					
Thailand	C	235					

[1] Includes 2 imported cases.
[2] Imported.

PLAGUE

[C indicates cases; D, deaths]

AFRICA							
Belgian Congo	C	12	1				
British East Africa:							
Kenya	C	7					
Uganda	C	94					
Egypt	C	[1]406	2			1	
Madagascar	C	472					
Morocco.[2]							
Rhodesia, Northern	C	1					
Senegal:							
Dakar	D	[3]1					
Thies	C	1					
Union of South Africa	C	25					
ASIA							
China.[4]							
Dutch East Indies: Java and Madura	C	209					
India	C	12,457					
Bassein	C	17	1				
Cochin	C	1					
Plague-infected rats		3					
Rangoon	C	4	1				
Indochina (French)	C	3					
Thailand:							
Bangkok	C	3					
Bisnulok Province	C	3					
Dhonpuri Province	C	1					
Jayanad Province	C	3					
Kamphaeng Bajr Province	C	29					

[1] Includes 5 cases of pneumonic plague.
[2] A report dated May 11, 1940, stated that there was an epidemic of bubonic plague in southern Morocco, where several hundred cases had been unofficially reported.
[3] Imported.
[4] Information dated July 7 states that up to July 6, 17 cases of plague had been reported near Tungliao, Hsingan Province, China; and a report dated July 13 states that an outbreak of bubonic plague occurred along the Yunnan-Burma border in the districts of Loiwing, Chefang, Juili, and Muchieh.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

Place		January–May 1940	June 1940	July 1940—week ended— 6	13	20	27
ASIA—continued							
Thailand—Continued.							
Kanchanapuri Province	C	12					
Koan Kaen Province	C	5					
Nagara Svarga Province	C	30					
Noangkhay Province	C	4					
Sukhodaya Province	C	22					
EUROPE							
Portugal: Azores Islands	C	2					
NORTH AMERICA							
United States. (See p. 1589; and also issues of Aug. 2, p. 1412, and Aug. 9, pp. 1466–1467.)							
SOUTH AMERICA							
Argentina:							
Cordoba Province	C	3	[5] 18				
Jujuy Province	C	1					
Salta Province	C	2					
Santiago del Estero Province	C	14	10				
Tucuman Province	C	4					
Brazil:							
Alagoas State	C	5					
Pernambuco State	C	1					
Peru:							
Cajamarca Department	C	20					
Lambayeque Department	C	10					
Libertad Department	C	44					
Lima Department	C	31					
Piura Department	C	6					
Tumbes Department	C	10					
OCEANIA							
Hawaii Territory: Plague-infected rats		13	6		2	3	5

[5] Includes 11 cases of pneumonic plague.

SMALLPOX

[C indicates cases; D, deaths]

AFRICA							
Algeria	C	5					
Angola	C	35					
Belgian Congo	C	1,709					
British East Africa	C	12					
Dahomey	C	17					
French Guinea	C	13					
Gibraltar	C	[1] 1					
Ivory Coast	C	113					
Nigeria	C	1,668	145				
Niger Territory	C	594					
Nyasaland	C	46					
Portuguese East Africa	C	1					
Rhodesia, Southern	C	183					
Senegal	C	131					
Sierra Leone	C	10					
Sudan (Anglo-Egyptian)	C	383	27		6	8	17
Sudan (French)	C	1					
Union of South Africa	C	82	3				
ASIA							
Arabia	C	255					
China	C	664	110	5	5	3	1
Chosen	C	533					
Dutch East Indies—Sabang	C	4					
India	C	108,319		550	440	976	257
India (French)	C	5					

[1] Imported.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths]

Place		January–May 1940	June 1940	July 1940—week ended—			
				6	13	20	27
ASIA—continued							
India (Portuguese)	C	24					
Indochina (French)	C	843					
Iran	C	151					
Iraq	C	135	28	3			2
Japan	C	527					
Straits Settlements	C	1					
Sumatra	C	1					
Thailand	C	12	2	18	11	27	
EUROPE							
Great Britain	C	2					
Greece	C	19					
Portugal	C	112	11	2	1		
Spain	C	314	2				
Turkey	C	139					
NORTH AMERICA							
Guatemala	C	1	16				
Mexico	C	52					
SOUTH AMERICA							
Bolivia	C	24					
Brazil	C	1					
Colombia	C	970	4		1		
Ecuador	C	1					
Peru	C	6					
Venezuela (alastrim)	C	128	6				

TYPHUS FEVER

[C indicates cases; D, deaths]

AFRICA							
Algeria	C	1,509	143		43		
Belgian Congo	C	1,210					
British East Africa	C	2					
Egypt	C	3,117	262	4	47	33	28
Eritrea	C	40					
Morocco	C	274	3				
Tunisia	C	515					
Union of South Africa	C	105	2				
ASIA							
China	C	1,278	448	63	30		
Chosen	C	156					
India	C	3					
Indochina (French)	C	2					
Iran	C	233					
Iraq	C	86	22	1		5	2
Japan	C	2					
Palestine	C	43	10	3	4	3	7
Straits Settlements	C	1	2				
Trans-Jordan	C	15					
EUROPE							
Bulgaria	C	85	9				
Germany	C	120	9				
Greece	C	24	1				
Hungary	C	69	5				1
Irish Free State	C		6			3	
Lithuania	C	59					
Rumania	C	1,092	86	1	7	6	5
Spain	C	9	5				
Turkey	C	503					
Yugoslavia	C	233	9				
NORTH AMERICA							
Guatemala	C	211	16				
Mexico	C	168				1	
Panama Canal Zone	C	3					

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths]

Place		January–May 1940	June 1940	July 1940—week ended—			
				6	13	20	27
SOUTH AMERICA							
Bolivia	C	165					
Chile	C	57	3				
Ecuador	C	2					
Peru	C	197					
Venezuela	C	8					
OCEANIA							
Australia	C	10					
Hawaii Territory	C	13	3			1	

YELLOW FEVER

[C indicates cases; D, deaths]

AFRICA							
Cameroon: Nkongsamba	C	[1] 1					
French Equatorial Africa: Fort Archambault	C	[1] 1					
Gold Coast	C	1					
Ivory Coast	C	1					
Nigeria:							
Ibadan	C		1				
Oshogbo	C	[1] 1					
Oyo Province	C		1				
Togo (French)	C		1				
SOUTH AMERICA							
Brazil:							
Espirito Santo State	D	[2] 28					
Rio de Janeiro State	D	[2] 1					
Colombia:							
Antioquia Department—San Luis	D	2					
Caldas Department—							
La Pradera	D	1					
Samana	D	1					
Victoria	D	1					
Santander Department	D					1	

[1] Suspected.
[2] Jungle type.

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