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LEAGUE OF NATIONS
HEALTH SECTION

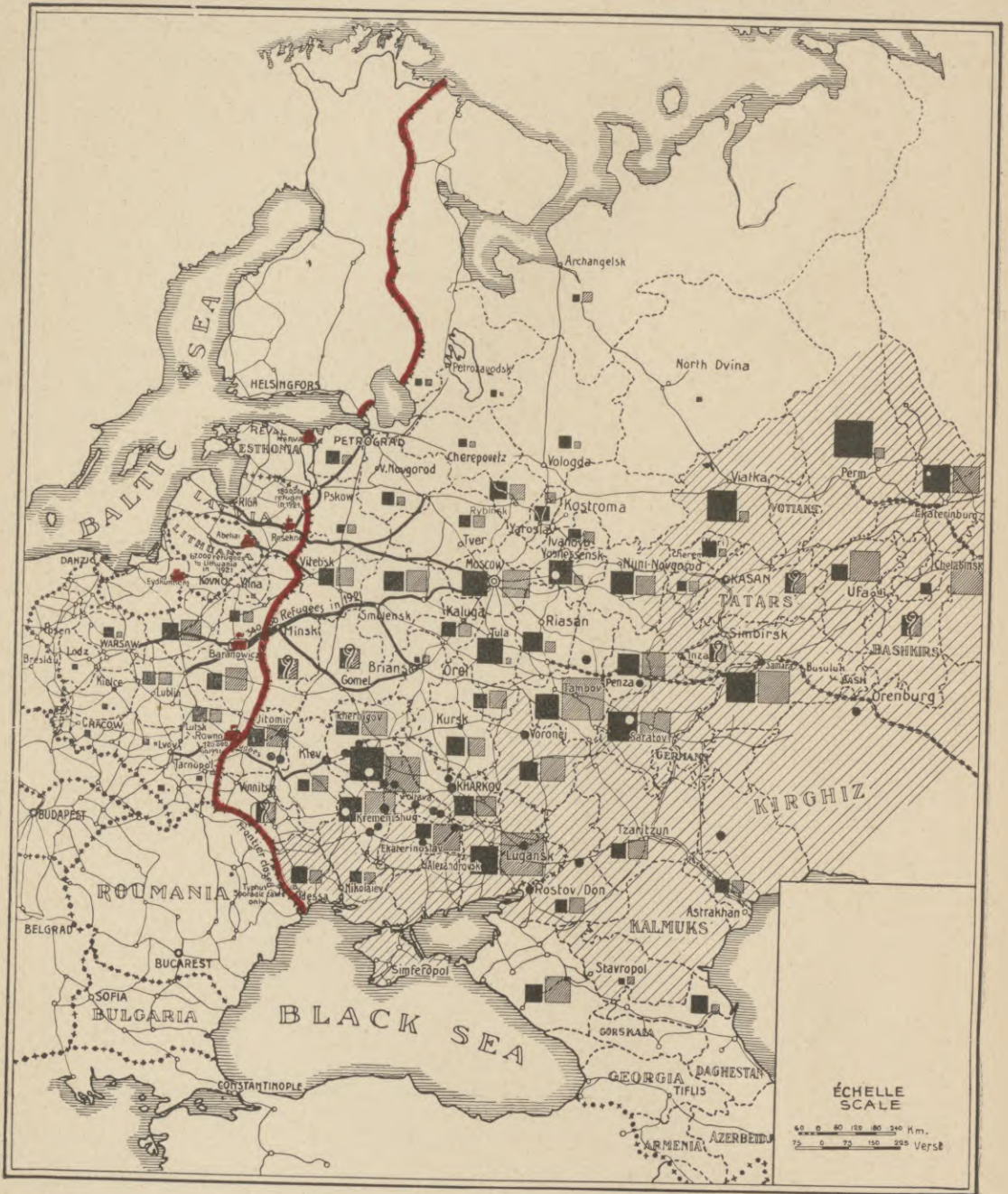
EPIDEMIOLOGICAL INTELLIGENCE

N° 3

GENEVA
JUNE 1922

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EPIDEMIC SITUATION IN EASTERN EUROPE DURING THE FIRST QUARTER OF 1922.



Légende :
 Explanation: ■ Typhus exanthématique. ■ Fièvre récurrente.
 ■ Typhus. ■ Relapsing fever.

Echelle : Nombre de cas. ● Localités atteintes par le choléra.
 Scale : Cases. 1m² equal 100 cases. ● Cholera infected localities.

/// Zone de famine. ■ Station de quarantaine. ---- Lignes de chemins de fer fermées aux voyageurs.
 Famine area. Quarantine stations. Railways closed to passenger traffic.

■ Pas de données statistiques. — Lignes de chemins de Fer.
 No statistical data. Railways.

ÉCHELLE
 SCALE
 0 50 100 150 200 250 Km.
 0 5 10 15 20 25 Verst.

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I.

**EPIDEMIOLOGICAL SITUATION IN EASTERN
AND CENTRAL EUROPE**

**Analysis of the Reports presented by the several National Delegations
to the European Health Conference held at Warsaw March 20th
to 28th, 1922.**

RUSSIAN FEDERATION AND THE UKRAINE.

Of all countries in Eastern Europe, Russia has suffered most from epidemics during the last four years, during which time about 7 million cases of typhus and relapsing fever were officially notified without counting the figures for the Red army. The culminating point was reached in 1919 and 1920, when 4,917,000 cases of typhus and 1,259,500 of relapsing fever were officially recorded. The official figures, however, do not represent the total incidence, and must be multiplied by at least 2 ½ in order to obtain an approximate picture of the situation¹. During the first ten months of 1921 these epidemics were declining (a total of 675,338 cases of typhus and 888,598 of relapsing fever were reported in 1921 of which 129,751 cases of typhus and 260,399 of relapsing fever occurred in the Ukraine), but since November, as a result of the situation in the famine areas, a considerable recrudescence of these diseases has been apparent, as is shown by the following official figures:

	Typhus	Relapsing Fever
October	14,578	29,258
November	29,513	45,537
December	40,836	58,560
January	87,742	89,535

¹ The same remark applies to all other countries in Eastern Europe. For more recent data than those contained in the reports, see the tables in Chapter III of this bulletin.

During these four years the epidemics have raged without interruption in Russia, the resistance of the population has been considerably diminished, and the Russian Health Organisation has been severely taxed.

The fresh increase of the epidemics of typhus and relapsing fever, threatens to be extremely severe.

These epidemics are extending over the whole of Eastern and Southern Russia, and throughout the country they are following the lines of the railways; all the districts traversed by the railways are affected. The exceptional movement of travellers explains the rapidity with which these diseases are spreading, and in the various Governments in which the famine is raging, the inhabitants, weakened by famine, fall an easy prey. In trying to escape from the double scourge, these people are infecting fresh districts.

The cholera epidemic, which broke out in 1921, when 176,885 cases were officially notified, has proved the most deadly visitation for many years. In 1922, cholera reappeared, in spite of the severity of the winter, in twenty-one different districts in the Ukraine (418 cases were reported between January 1st and March 7th), and in Soviet Russia — Rostov, Voronege, Samara, the governments of Penza and Tamboff being centres of infection — as well as in the Republic of Kirghiz and the distant cities of Tashkent in Turkestan and Novo-Alexandrovsk in Siberia.

The People's Health Commissariat, in whose hands the entire work of combating epidemics is concentrated, is at the head of the sanitary organisation of the Russian and Ukrainian Republics.

Attention has been paid to the development of epidemic hospitals as well as of bathing and disinfecting establishments. The sanitary organisation attached to the railway system is of particular importance; it comprises isolation centres and hospitals, baths, disinfection trains and special mobile sections.

ESTHONIA.

In 1921 there were 345 cases of typhus and 119 cases of relapsing fever; in January and February 1922, 48 cases of typhus and 33 cases of relapsing fever; these cases occurred almost exclusively amongst persons returned from Russia.

Communication between Russia and Esthonia takes place either by railway through the town of Narva — where four quarantine stations have been established — or by the port of Reval, where there is a large maritime quarantine station.

LATVIA.

The reason why the typhus epidemic has not been stamped out in Latvia is the return of repatriated Latvians from Russia (2,952 cases of the three kinds of typhus were reported in 1920-21) and the passage of refugees and prisoners of war from other countries across Latvia. These numbered 102,933 in 1920 and 180,451 in 1921.

In January and February 1922, the co-efficient of morbidity was more than doubled, and it is relapsing fever which holds the greatest sway.

Sick repatriated persons are isolated at Rositten or Riga.

LITHUANIA.

3,064 cases of typhus were reported in 1921 (as compared with 5,302 in 1920). At the time when the quarantine station of Obeliai on the Russian frontier was full of repatriated persons, a violent epidemic of typhoid fever broke out; 600 cases were registered in December 1921. The epidemic has now been checked. Cholera broke out at the beginning of 1921, and 35 cases (9 mortal) were reported.

At the beginning of 1922 there were 37 hospitals, with 1,750 beds in Lithuania.

All repatriated (67,000 in 1921) return through the quarantine station of Obeliai, which can accommodate 1,200 persons.

POLAND.

The health situation in Poland, and especially on its eastern borders (Novogrodek, Pinsk, Bialystok, Volhynia), became more serious during the winter of 1921-22, as a result of repatriation which was carried out under the most unfavourable conditions.

468,000 repatriated persons returned to Poland in 1921, 90 per cent. of whom have settled in the eastern districts. In spite of the quarantine stations which have been set up on the Russian frontier by the Polish Government, these persons bring back from Russia germs of contagious diseases picked up on their journey; this is due in the first place to the inadequate equipment of these stations, the insufficiency of their number, and to the fact that a very large number of repatriated persons traverse the frontier through woods and marshes and thus escape any sanitary control.

As a result, the typhus epidemic, which had been declining since 1920 (the culminating point was reached in 1919, when 231,148 cases were notified, as against about 49,000 reported in 1921), has made alarming progress, as proved by the following table: September 1921, 860 cases; December 1921, more than 3,000; January 1922, 8,600 cases. Relapsing fever, which has been steadily on the increase during recent years (about 14,000 cases notified in 1921), has shown a very marked recrudescence during the winter of 1921-22. The cases notified numbered 680 in September 1921, and 8,100 in January 1922.

The entire anti-epidemic campaign in Poland is under the control of the Chief Epidemic Commissariat. The Commission has 122 hospitals with 11,730 beds, and a reserve of 1,850 beds in the Red Cross Military Hospitals, *i.e.*, a total of 13,580 beds.

The Commission has organised a mobile section of 10 beds in each hospital, and is at present organising on the eastern borders 60 mobile columns provided with disinfecting equipment and baths.

There are two quarantine stations on the railway lines to Baranowicze and Rovno, with branches at Bialystok and Dorohusk, and five on the main roads. At all these stations repatriated persons are cleansed, deloused, supplied with linen and vaccinated.

ROUMANIA

(ACCORDING TO A REPORT PRESENTED BY PROFESSOR J. CANTACUZENE).

Cholera.

Cholera was an unknown disease in Roumania before 1913, except for certain sporadic outbreaks in the ports in 1908, 1910 and 1911. In July 1913, however, the unvaccinated Roumanian army was infected in the Balkans. The epidemic spread rapidly but was soon checked, thanks to vaccination practised on a large scale among both the military and civil populations. The last case was registered in November 1913.

No cases were reported either in 1914 or 1915. In August 1916, however, cholera reappeared, introduced by Bulgarian prisoners and Russian soldiers. Only very few cases occurred among the vaccinated Roumanian troops, but a certain number of unvaccinated recruits were infected, as were soldiers in a division stationed in the Dobrudja, who, by an oversight, had not been efficiently vaccinated. A subsequent revaccination of this division completely arrested the outbreak.

In the Dobrudja, cholera continued to spread and, owing to the large number of refugees who crossed the Danube, constituted a serious menace. Thanks, however, to the systematic vaccination of all these refugees, and of all the inhabitants of the places which received them, the epidemic was quickly and definitely suppressed.

Typhus and relapsing fevers.

Relapsing fever was completely unknown in Roumania until 1913, if the unconvincing cases quoted by Marcovici and Obedena as having occurred in 1864 be excluded. The numerous blood examinations carried out daily in the Roumanian laboratories, examinations for the malaria parasite, had never revealed the presence of the *Spirochæta obermayeri*. The first cases observed were imported from Bulgaria as a consequence of the war of 1913. They were all reported from Southern Dobrudja. During the three following years isolated cases occurred here and there, in various parts of the country, but gave rise to nothing that could be called an epidemic. This state of affairs continued till the beginning of the war of 1916.

Typhus fever appeared only at rare intervals in Roumania and then always in the form of very limited foci without any tendency to spread. These isolated cases most often occurred among the gypsies in the neighbourhood of Bucarest or among foreign labourers from Galicia and Bukovina who come to work in the fields, but they were of rare occurrence. The annual number of deaths attributed to typhus fever varied between 2 and 10. When the great war began, most of our doctors were completely ignorant about this disease. The war of 1913 in Bulgaria, where the disease is endemic, produced a certain increase in the number of cases of typhus fever in Roumania. In 1915 there were 404 cases of typhus fever with 64 deaths throughout the old Roumanian kingdom — a case mortality rate of 15.8 per cent.

Towards the end of 1916, at the time of the retreat in Moldavia, an extremely serious outbreak of typhus fever began. The earliest cases in December were undiagnosed. The epidemic reached its

greatest intensity in March 1917; afterwards it declined rapidly, and by the end of June of the same year the outbreak appeared to have been almost extinguished. During the course of this epidemic the large proportion of abortive attacks was very noteworthy; such cases are extremely difficult to diagnose unless looked for systematically, and undoubtedly play an important part in the spread and persistence of the epidemic as well as in the production of immunity among the population of infected areas. The case mortality rate was between 15 and 17 per cent; among the Russian troops it was much lower—6 per cent.—although the sick of both Russian and Roumanian troops were treated in the same hospitals and by the same doctors. The case mortality rate among the doctors of the medical corps was 41 per cent. More than 300 Roumanian doctors and four French doctors died of typhus fever during the course of the epidemic. The increased virulence of the unknown germ was shown at the height of the outbreak by a change in the clinical type of the disease and by the marked neurotrophic action of the organism or its toxine.

A deadly epidemic of relapsing fever appeared at the same time with a case mortality rate of no less than 12 per cent. The long convalescence was characterised by an intoxication and asthenia more marked than in the case of typhus. The relapsing fever epidemic began at the same time as the typhus epidemic, increased in the same manner, reached its height at the same time, but then suddenly eased in the month of May, not to reappear, although typhus continued to produce a certain number of new cases. This striking difference between the behaviour of the two epidemics is remarkable in view of the fact that both diseases alike are spread by the louse.

The effect of relapsing fever in awakening latent tuberculous lesions is worthy of note. Of all known septicæmias, none is more potent to convert a latent case of tuberculosis into an acute case than relapsing fever. From this point of view, relapsing fever is much more harmful than typhus.

At the end of the war (November 1918) relapsing fever had completely disappeared from Roumania and has not since reappeared. The incidence of typhus fever has become less and less. After the fall in the epidemic curve in the summer of 1918, a slight recrudescence was experienced in the winter of 1918, this was not serious; and the number of cases was not large. The re-establishment of communications with Bessarabia gave rise to a serious increase in the epidemic in 1919. There were 56,042 cases and 10,015 deaths recorded in 1919; 9,857 cases and 1,592 deaths in 1920, and 2,055 cases with 262 deaths in 1921. To-day the epidemic has practically disappeared; its extinction is not attributable only to delousing measures but, more important still, to the gradual extinction of the Bessarabian focus which has been rendered possible by the cessation of communication between Bessarabia and Russia, enforced by a military cordon. The Bessarabia focus has thus been shut off from continued reinfection from the east.

Smallpox.

Smallpox had been all but unknown in Roumania for very many years. Throughout the kingdom vaccination was practised with the utmost regularity: in the schools and in the army, revaccination was methodically practised. From time to time an isolated case was reported from some village on the Pruth, on the Russian frontier, but such an occurrence was very rare. When it did occur a general revaccination of all the inhabitants of the village was ordered and the disease never spread. When the war of 1916 broke out, very few of our students and our young doctors had had an opportunity of seeing even a single case of smallpox.

Smallpox was introduced by the Russian troops. During the summer of 1917, isolated cases occurred in certain villages in Moldavia where these troops were stationed; the disease affected chiefly women who had escaped revaccination to which men are submitted either in schools or in the army. The

epidemic spread steadily and was still increasing when the Treaty of Bucharest, which ended the first part of the war, was signed. Statistics for 1918 are very incomplete. Accurate information exists only for the period beginning 1919. At the beginning of that year a methodical revaccination campaign throughout the kingdom was organised. The number of cases and deaths attributed to smallpox was as follows: 1919, 21,123 cases with 5,834 deaths; 1920, 934 cases, with 192 deaths; 1921, 112 cases with 19 deaths. *To day the epidemic is completely suppressed.*

Scarlet Fever.

Before the war, scarlet fever was the most widespread and the most deadly of infectious diseases in Roumania. Thousands of children died of it every year. In 1902 there were 20,273 cases notified with 4,189 deaths — a case mortality rate of 20.6 per cent; in 1912, 13,499 cases with 2,397 deaths (17.9 per cent.); in 1915, 21,840 cases with 3,807 deaths (17 per cent.). In certain years the case mortality rate has exceeded 26 per cent. Scarlet fever in Roumania exhibits a very high degree of virulence, much greater than that of English forms of the disease. Hypertoxic forms, fatal in two or three days or even less, are frequent. In these fulminant cases streptococci are rarely if ever found in the blood stream: streptococcal complications are encountered most frequently in the more prolonged, less acute, cases. Most of the streptococcal *otitis media* which is so common in Roumania, is a sequel of scarlet fever. The virulence and mortality of scarlet fever is less marked in towns than in the country. This fact is attributable no doubt to the earlier diagnosis and earlier and more methodical isolation possible in towns. Side by side with typical forms of the disease, abortive forms are of frequent occurrence and contribute appreciably to the immunisation of the population. Doctors practising in the country in Roumania have frequently noted that a village which has suffered a severe epidemic of scarlet fever acquires a very appreciable degree of immunity that persists for some time, often for several years.

The attention given to the high incidence and gravity of scarlet fever in Roumania in this note is prompted by a desire to direct attention to a curious epidemiological observation. This disease, so prevalent and widespread, completely disappeared during the course of the epidemic of typhus fever in 1916 and 1917. It reappeared as typhus disappeared, and in similar proportion. In 1918 only a few cases were reported: in 1919, 2,779 cases with 317 deaths: in 1920, 6,171 cases with 936 deaths, and in 1921, 19,766 cases with 3,579 deaths. The mortality rate is low when compared with that which prevailed before the war, but the virulence of the disease is increasing. Scarlet fever and tuberculosis are to-day the two chief dangers that threaten the public health of Roumania.

Typhoid and Paratyphoid Fevers.

There has been a noteworthy decrease in the incidence of typhoid and paratyphoid fevers among the civil population of Roumania during the last few years — a decrease attributable to the compulsory vaccination of the army and its frequency among the civil population. The number of cases and deaths reported during certain recent years is as follows: 1912, 6,104 and 903 deaths; 1915, 5,359 and 758 deaths; 1919, 3,766 and 480 deaths; 1920, 1,603 and 251 deaths; and 1921, 1,668 and 264 deaths.

Syphilis.

One inevitable result of the war was an increase in the prevalence of syphilis. A methodical campaign against the disease was prosecuted during 1920 and 1921; patients have been treated in

large numbers in dispensaries specially organised for the purpose. Thanks to these measures, the spread of the disease has notably diminished.

Malaria.

The pre-war foci of malaria, situated for the most part near the Pruth and the Danube, were successfully attacked with quinine. At the time of the armistice in 1918 an outbreak of extreme virulence appeared and was widespread. Exceptionally bad cases frequently died. Such a form of the disease was unknown in Roumania before the war. The severity of the outbreak is not attributable to the want of quinine but to a particularly virulent parasite which the Bulgarian troops brought from the Vardar region to the French troops at Salonika as well as to our own troops. The fact that the German army of occupation reported cases of the same type, at the same time, supports this hypothesis.

Diphtheria.

As in other countries diphtheria, now that serum is used, offers only a very slight menace to the public health. Serum was first used in 1898 since when the morbidity from the disease has diminished by half. There were 6,962 cases notified in 1921 as compared with 12,534 in 1897. During the last two years the case mortality rate has been 11.2 and 10 per cent. respectively.

Recent observations have shown that 53.5 per cent. of children aged from six months to two years, 6.2 per cent. of children from 5 to 15 years, and 14 per cent. of adults from 15 to 20 years give a positive Schick reaction. Similar results were obtained from an examination of recruits from town and country alike, no doubt owing to a certain immunity possessed by the country population due to infection from undiagnosed or neglected cases.

Infantile gastro-enteritis.

Infantile gastro-enteritis is always present and is responsible for a high mortality. In 1904, no less than 23,192 deaths among children of less than a month old, and 25,323 among children from one month to one year, were ascribed to gastro-enteritis. These figures represent 21 per cent. of the total general mortality. More recent statistics are incomplete. From 1898 to 1904 the average number of births was 241,618, and the average number of deaths was 158,493 per annum.

Weil's disease.

During the summer of 1917, at a time when other epidemics were relatively quiescent, Weil's disease appeared in a mild but very contagious form. The total number of cases, of which many were atypical and ill-defined, was considerable. Paratyphoid bacilli were frequently isolated from the patients' blood and dejecta. The *Spirochæta icterohæmorrhagica* was never isolated.

BESSARABIA.

Before the war the conditions in Bessarabia were similar to those in Southern Russia, where smallpox, relapsing and typhus fevers are endemic. Since 1920, a military cordon erected along the Russian frontier has proved an insurmountable barrier, and Roumania has been able to undertake the sanitary reconstruction of Bessarabia. Among the troops that guard the frontier not a single case of relapsing fever has occurred during the last fifteen months, and no case of either typhus fever or smallpox has been reported during the past year.

Smallpox and typhus were extremely prevalent during 1919 in Bessarabia; no statistical data for this period are available. During 1921 there were 2,114 cases of smallpox reported with 435 deaths. These figures represent a greatly diminished prevalence as compared with the immediate preceding years. The incidence of typhus is likewise decreasing; in 1920 there were 13,240 cases with 2,193 deaths; in 1921, 3,941 cases with 263 deaths. The case mortality is therefore much lower than in Roumania, a fact no doubt attributable to an immunity arising from ill-defined attacks of the disease which has been endemic in the country.

Relapsing fever was responsible for 20,306 cases and 333 deaths in 1920 and 4,605 cases with 89 deaths in 1921. The report points out the following remarkable fact: the epidemic of *Spirochaeta gallinarum* which is always prevalent in Southern Russia has never crossed the frontier or infected the Roumanian poultry-yards.

In Bessarabia, as in the Old Kingdom of Roumania, the incidence of scarlet fever increases as that of typhus fever diminishes. In 1920, 7,143 cases and 830 deaths; in 1921, 11,404 cases with 1,430 deaths were reported.

There were 2,277 cases and 160 deaths ascribed to typhoid fever in 1921 among the civil population of Bessarabia, where anti-typhoid vaccination has not made as much progress as it should have done. The fact that the well-vaccinated army continues completely free from the disease in so heavily infected a centre is significant.

TRANSYLVANIA AND BUKOVINA.

Sanitary conditions in Transylvania, which is further from the eastern frontier, are excellent.

Bukovina, the scene of prolonged fighting, has been particularly affected by a violent outbreak of smallpox and typhus, but an epidemic campaign was organised in 1921. At present only a few separate centres of small importance exist.

TURKEY.

The health conditions in Turkey are fairly satisfactory in spite of the emigrants entering the country. The number of cases of contagious disease reported in 1921 was as follows:

- 14 cases of plague.
- 114 cases of relapsing fever.
- 232 cases of typhus.
- 350 cases of typhoid fever.

DANZIG.

Three cases of typhus have been reported in 1922 among the immigrants coming from Poland.

GERMANY.

The health situation in Germany, which, until a very short time ago, was perfectly satisfactory, is now menaced by the arrival of German colonists returning to Germany from the Volga districts.

Germany, at present, possesses large observation camps at Eidkuhnen, Hammersteinen and Frankfort-on-the-Oder, and, in addition to these, Swinemünde, for refugees coming by sea, and Bechfeld in Bavaria, for those returning by the Central European route.

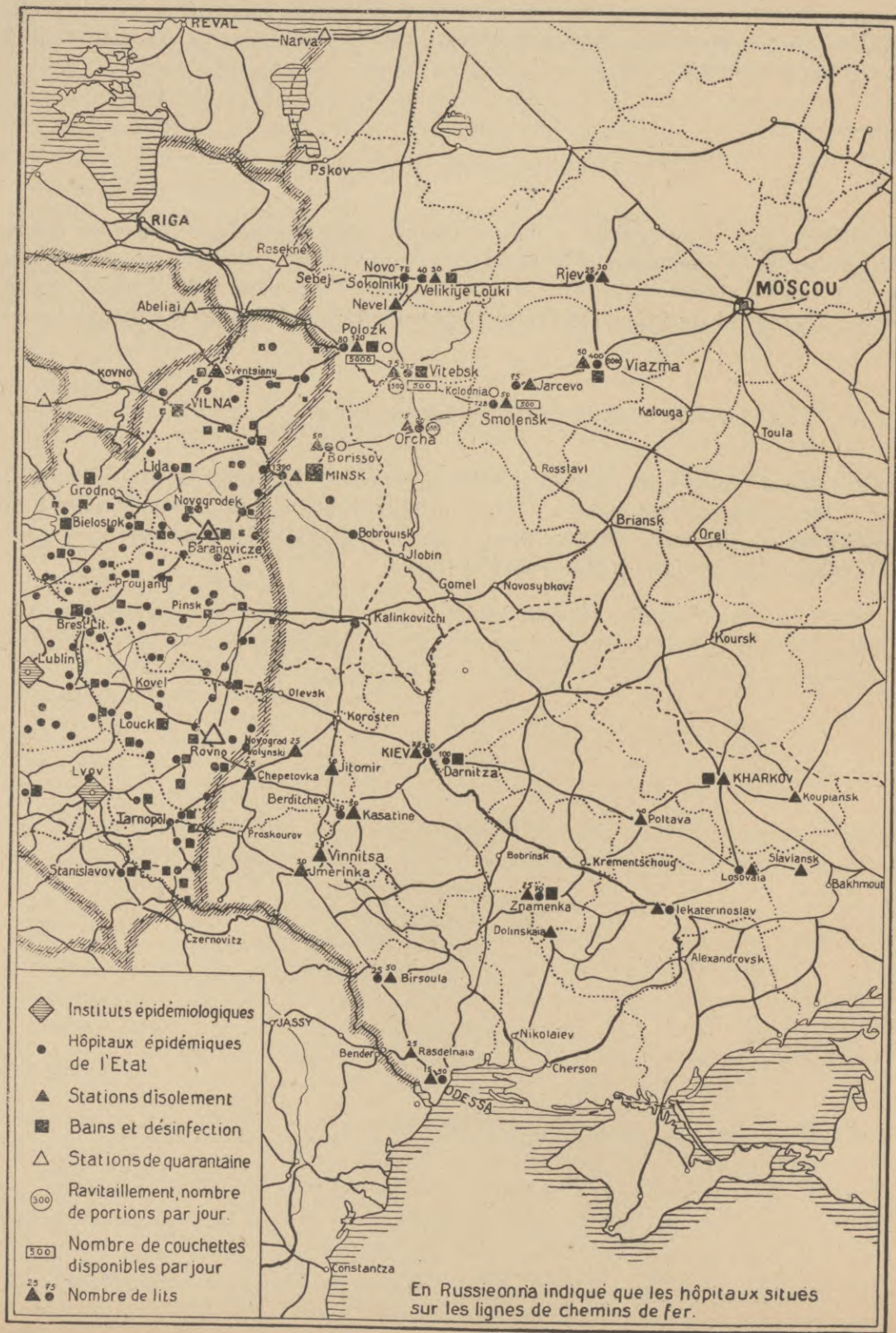
CZECHOSLOVAK REPUBLIC.

In order to reduce to a minimum the danger arising from the return of prisoners of war and repatriated persons, the Government established six quarantine stations. Of these there only remain at the present time the station of Pardubice, accommodating 1,000 persons, and the transit station at Bohumin. The others have become superfluous owing to the decreased numbers of repatriated persons.

SERB-CROAT-SLOVENE STATE.

1,139 cases of typhus were reported in 1921, as compared with 1,426 in 1920. The greatest number of these cases occurred during the winter of 1920-21, at the time of the extensive Russian immigration from South Russia (40,000 persons). At the present time there are only a few sporadic cases of typhus in the provinces of Macedonia and Bosnia.

Location of Epidemic Hospitals and Sanitary Institutions in Eastern Europe.



II

THE PRESENT STATE OF HEALTH DEFENCE IN THE EUROPEAN SANITARY ZONE

The anti-epidemic campaign in the frontier zone between Russia, White Russia, the Ukraine and the Border States deals with epidemiological problems of extreme complexity.

The grave conditions associated with famine, migration and repatriation, the severe recrudescence of epidemics of typhus and relapsing fever, accompanied by an epidemic of cholera, the lack of trained medical staff of all kinds, the quite insufficient hospital accommodation, the serious shortage of sanitary material, drugs, soap, fuel and even of food for the sick, have all to be faced at the same time.

The following statement gives an insight into the actual state of sanitary defence in the Russian Federation and in the States bordering Russia on the west.

1. RUSSIAN FEDERATION AND THE UKRAINE.

(a) *Central Health Authorities.*

The anti-epidemic campaign in Russia is concentrated in the hands of the People's Health Commissariat. A Central Epidemic Commission composed of medical men and representatives of the section of the "Narkomzdrav"¹ concerned is attached to the Commissariat. This Commission is an advisory body, but it can take final decisions on the assignment of funds to local health authorities for the campaign against epidemics.

(b) *Local Health Authorities.*

The local work is done by local, provincial and district Soviets. The local health sections are responsible to their respective executive committees and submit for their approval all their more important schemes and also their budget, but as local organisations of the Narkomzdrav, they are

¹ Nar. Kom. Zdrav. People's Health Commissariat.

responsible to the latter for their medico-sanitary activities. All decisions, instructions, circulars and decrees of the Narkomzdrav are binding upon them.

(c) *Transit and Evacuation.*

The administrative work on transit, evacuation and supply and distribution of sanitary materials is concentrated in the Central Health Administrations.

(d) *Relation to the Autonomous Republics.*

In the autonomous Republics which form part of the Russian Federation, there exist special People's Health Commissariats which are executive organs of their respective Congresses of Soviets and of the Soviet of People's Commissaries. They are under the direct control of the latter. The laws passed in the R.S.F.S.R. (Russian Socialist Federation of Soviet Republics) and the decrees of its Narkomzdrav are compulsory upon the Narkomzdravs of the republics in so far as they are laid down in conventions which have been concluded.

As a matter of fact, however, the co-ordination of the activities of Narkomzdravs of autonomous republics with the Narkomzdrav of the R.S.F.S.R. is not limited to signed conventions. As the Narkomzdravs of autonomous Republics are organised after the model of the Central People's Health Commissariat, their staff is, in the majority of cases, recruited among persons who had worked under the Russian Commissariat, and who, for that very reason, maintain contact with the latter.

The *conventions* hitherto concluded with the Narkomzdrav of the autonomous Republics deal with the following subjects: *the distribution of the medical staff, exchange of information on epidemic diseases, the administration of health resorts, and sanitary work on the lines of communication.*

(e) *Medico-sanitary service on the lines of communication.*

In order to unify the medico-sanitary service on the railways and waterways, this work in the autonomous Republics is placed under the general control of the Narkomzdrav of the R.S.F.S.R., and the autonomous Republics possess no special organs for the control of the medico-sanitary services on the lines of communication.

The Republic of the Ukraine is the exception to this rule of unification of the medico-sanitary services on the lines of communication. The railway system of the Ukraine is, to a certain extent, an independent unit, and its waterways can be grouped under one administrative control. The Narkomzdrav of the R.S.S.U. includes therefore a department controlling the medico-sanitary work on the lines of communication. The work of the Ukraine Department for lines of communication is carried out according to the general instructions of the Narkomzdrav of the R.S.F.S.R. and its lines of communication department.

Sanitary inspection on the maritime frontiers, and the carrying out of measures to prevent the spreading of contagious diseases through the ports (some of these ports belong to more than one Republic) are controlled by the respective frontier administrations.

(f) *Medical Staff.*

According to the register of 1921, the number of medical staff in Soviet Russia amounts to 17,375 doctors and 36,301 medical assistants; in the Ukraine the numbers are 7,645 doctors and 8,845 medical assistants.

(g) *Hospital Accommodation and Isolation Stations.*

The epidemic hospital accommodation at the end of 1921 amounted to 35,000 beds. The number of beds reserved for parasitic epidemic diseases and cholera was about 20,000, the remainder being kept for the treatment of children's infectious diseases, smallpox, etc.

Isolation centres have been set up in all the principal railway stations in Soviet Russia. The number of special slip coaches (*wagons volants*) equipped with sanitary staff is 100. There are about 25 special disinfection trains with baths and laundries.

In the territory of the Ukraine the number of epidemic beds is 30,350. The number of bathing establishments amounted in 1921 to 250, 39 of which were mobile. Disinfecting establishments numbered 230 in 1921, 98 of these being mobile.

The isolation and sanitary control stations numbered 31; they are equipped with 1,775 beds and provided with 25 mobile disinfecting columns.

Owing to the fact that the epidemics of this year are spreading chiefly along the railways, among the moving masses of emigrants from famine areas and those repatriated, it is advisable to give some details on the sanitary organisation on railway lines going westwards from Moscow and converging on Minsk, Smolensk, Vitebsk, and those passing through the western part of the Ukraine.

(1) *General Organisation.*

At certain railway stations are isolation stations "Isopropuncts", small ambulances for first-aid and isolation, with or without beds. These are controlled in some cases from the Narkomzdrav transit section, in others by Centr-evac.¹

The service is organised to send cases to the nearest hospital, either general or epidemic, and where isolation beds exist, a kitchen is attached, because cases may have to be retained several days or treated there entirely. Under these circumstances some provision for delousing and disinfection is made, and sometimes a bath exists.

Food supplies are limited, and it is especially difficult properly to feed the really sick who cannot or ought not to take solids; one finds cases of enteritis or dysentery eating black bread because there is no milk and often no material for making gruel. Fuel is the vital question; there may not be enough to heat the water for baths, still less for laundry purposes and disinfection. The disinfection apparatus is very often out of order.

All details and figures furnished must therefore be taken with great reserve; the bed capacity or bath capacity may give no indication as to how far such posts help to control epidemics.

(2) *Railway Lines.*

RAILWAY LINE MOSCOW-RIGA.

Rzev. — Junction of Viasma-Tver line. Isopropunct of 30 beds. Isolation beds in hospital 25.

Velikie-Luki. — Isopropunct of 30 beds. Hospitals: one for 50 general cases; one epidemic, 40-50 beds as maximum. Bath and disinfection for 300 per day. At present under repair. Fuel is short.

¹ Central Evacuation Organisation.

Novo-Sokolniki. — Isolation hospital, 78 beds as maximum.

Sebej. — No hospital. Refugees reported as staying in wagons.

ALEKSANDROVSK LINE : MOSCOW-MINSK.

Viasma. — Viasma is the railway junction of the lines from Syzran *via* Kaluga and the Moscow-Minsk route, and an important point in the movement of echelons of refugees. The isolation station worked by Centr-evac is well organised and capable of holding 75 beds. 50 are now in use. Cases are well fed and after diagnosis are removed from here to the epidemic hospital.

This hospital, situated in the town two kilometres from the station, is an epidemic unit of Narkomzdrav, has 220 beds and is provided with a good helios. Near the station is another hospital in some barracks with 180 beds. This also receives from the isolation hospital and takes in all types, having one barrack of boxes for smallpox, scarlet fever, etc. It has an old bath, for about 30 at a time. A Japanese camera has been sent recently. Supplies are not very short.

There is a small laboratory for rapid diagnosis.

Centr-evac feeds echelons at a point beyond the station and can supply 3,000.

Jartsevo. — A selecting point for sick of the Epidemic Commission of Smolensk. A local epidemic hospital has been arranged, and 75 beds are ready. The general hospital has beds for epidemics. There is no food on the station for refugees as Evac has been closed down.

Kalodnia. — Feeding centre of Centr-evac, where up to 3,000 rations can be given per day; here trains wait a long time. Hot water is reported available. Sanitary arrangements nil; railway doctor states that in the spring the line is cleaned and lime exists in plenty for cleaning.

Smolensk. — Three lines converge at the two adjoining stations of the Moscow-Minsk and Riga-Orel sections.

Apart from echelons, sick come from Moscow or *via* Briansk from the Volga, or by the Riazan-Uralsk route; there is a steady stream of refugees.

The stations are crowded at night, but swept out and carbolised each morning. The boiling-water plant works when there is fuel, but this is often scarce and the water is only luke-warm. Outside the station are two medium-sized barracks used as temporary shelters (500-600 persons can be sheltered).

The Isopropunct includes a hospital for 50 cases.

In the town the full complement of beds for infectious cases is 728.

Children's institutions are overcrowded with heavy infection of all kinds, and there are no means of segregation, as no special children's hospital exists in the whole province. There is the usual lack of sanitary materials.

There is absolutely no bathing provision in Smolensk and no soap.

Disinfecting materials and apparatus are very short in the whole area. There are in Smolensk four formalin and four helios apparatus which can be worked, and 25 for formalin in the whole district.

Hydropults (for spraying disinfectants) are very few, the town having only four, and until recently the railway sanitary section had none.

Orsha. — This railway junction receives all echelons directed to Minsk from Gomel, Vitebsk and Smolensk and the district has been heavily infected.

The sanitation at the station is bad. Hot water exists, but the supply is soon exhausted. For the disinfection of the station and trains there may be two hydropults, but of doubtful efficiency; and

infected wagons are not detached. If any sick are reported, some may be removed to the ambulance for first-aid on the station with 15 beds for temporary use, and, if beds are available, to the Centr-evac hospital; otherwise they go to Minsk.

The Evac hospital, which is well organised, is situated on the line $1\frac{1}{2}$ km. from the passenger station (but with no place for medical examination) and has a capacity of 150 beds, but now uses only 80 for financial reasons. Helios disinfecter is in working order.

The town hospital has a bed capacity of about 80. There is a separate building in proper order and ready at any time as a cholera isolation hospital, with 30 beds.

The feeding capacity is 3,500 meals per day ($\frac{1}{2}$ pound of bread and meat and flour soup is given).

The laundry had been burnt down and has not been re-established. At the side of the hospital is a bathing house which has not worked for four months, and is really only suitable for summer use. Its daily capacity has been 150-200 persons.

Borisow. — Centr-evac has a feeding post and Isopropunct with 50 beds. The disinfecter works. In the town is a bath, capacity unknown. It is probably not working owing to shortage of wood.

The town hospital can take some infectious cases, but the bulk have to stay at Centr-evac temporary hospital.

Minsk. — Minsk, the capital of the White Russian Soviet Republic, has to deal with great epidemiological problems as the chief frontier-transmitting point. About 300,000 refugees going to Poland passed in 1921 through the White Russian Soviet Republic. With the sudden development of the epidemic of this winter, in presence of the heavy morbidity existing at the same time in every echelon sent from the famine area, Minsk has had to handle, as well as it could, all these converging streams. For this, funds, appliances, accommodation and supplies were inadequate.

The hospital accommodation in Minsk probably consists of 1,390 epidemic beds. In addition to this, there are 760 epidemic beds of the territory of the Republic.

Each hospital has a helios more or less in working order.

Disinfection in Minsk: Hydropults. The town has 3, Belevac 1, railway 1 for the section. More have been sent.

City hospital has a Rubner in working order.

No. 1 Soviet Hospital has a helios.

The new hospital has converted a small room into a camera which can be used for sulphur. One Japanese camera has been supplied.

The city disinfection is done in a separate building in the centre of the town and is quite efficient. A large American steam disinfecter of field pattern will hold full-size mattresses, etc., and a sulphur chamber exists for perishable goods.

Baths. — Military baths, daily capacity 2,000, with a laundry and steam disinfecter, can be used for refugees.

Bathing train (temporary) for 750 with a helios.

Baths in the town: Two exist, the larger, for 500 people, needs reconstruction and is not working. A disinfecter is reported. The smaller is reported as ready to work if fuel were available. It is small, has no disinfecter and is very dirty.

A large central building in the town had been used as combined home and kitchen. This unfortunately was burnt. The kitchen is still carried on for about 2,000 persons, and this building is still used as a temporary hospital.

Sanitary arrangements for controlling enteric diseases are inadequate, and in some places non-existent. The chief offenders are the railways. The boiler in the station is working, but no boiler exists between Minsk and the frontier.

No lime exists for the permanent way. The removal of dead from trains is a serious problem, as workers have no protection. They need overalls, gloves and hydropulps.

Hospital and sanitary transport is always in a state of crisis; hay is very expensive, and the Nar-komzdrav has only four horses for the removal of sick to hospital, for carrying material to the town disinfectant and for the inspection carriage. They get some help from the army, but if a site for the isolation of refugees is established five versts from the town it is of great importance to arrange for the rapid transport of sick by automobiles.

Vitebsk. — This is a very important point in the transport of echelons from Petrograd as well as other northern lines.

The Centr-evac organisation is quite efficient, and is doing good work with the means it has. The isolation station, arranged for 75 beds, is very well organised, with receiving room and bath, sulphur chamber, and clothes store; good kitchen and clean wards.

An excellent laundry, cleaning 280 kg. of linen per day, is attached to the station.

There is a large sulphur chamber.

The feeding capacity is 1,500 per day ($\frac{1}{2}$ lb. of bread and some meat soup).

The barracks are close to the line and can hold 500 in the winter.

There is a bath capable of 800 in the day, with large formalin camera for delousing up to 150 per hour, but at the moment it is out of service, needing repair. There is no wood, and for this reason the water boilers at the station are sometimes not used for weeks.

1,600 beds are at present in use in the district, of which 600 are for infectious diseases; Vitebsk 375, and others in small places.

The railway has its own epidemic hospital of 70 beds for their workmen.

Soap is scarce and hydropulps few; the railway has two.

Polock. Railway has an Isopropunct with epidemic hospital for 120 beds. It is proposed to increase it to 200.

Large Centr-evac barracks exist, in which 5,000 could be lodged in warm weather, with bath-douches which could deal with 1,000 per day. There is a good laundry and a disinfection camera for hot air.

The town hospital has 80 isolation beds.

A very severe epidemic has been brought here by German colonists.

Nevel. Junction of Vitebsk line with that from Velikie-Luki to Polock. There is a railway Iso-propunct at this junction.

3. *Railway Sanitary Service in the Western Ukraine.*

The isolation stations on lines converging on Rovno are established at Darnitza (100 beds, bathing accommodation for 3,000), Kasjatyn (50 beds in the Isopropunct and 30 in the railway hospital), Jmerinka (50 beds), Vinnitza (25 beds), Novgorod-Volhynsk (25 beds), Shepetovka (25 beds).

Shepetovka is the nearest isolation station to the Polish frontier. It is situated on the edge of a forest in a forest area, and it is certain that crowds of refugees coming without registration can live there in the summer until they find an opportunity to get across the frontier.

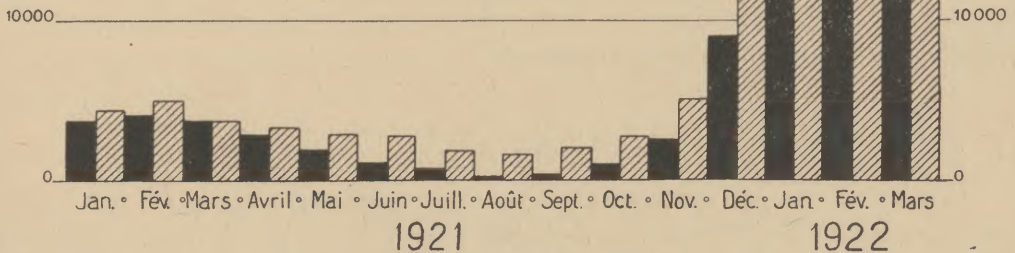
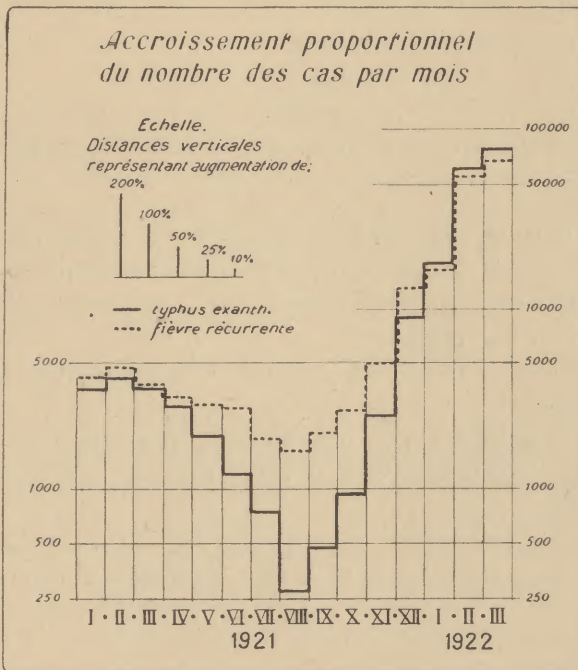
The town has a small general hospital of 50 beds. There exists a sanitary train with disinfecting cameras; one for steam, the other for formalin.

The feeding train has not been there for two months, but is said to be returning shortly; during this interval no food in any form is available for echelons.

Cases of Typhus and Relapsing Fever reported on the Railways
in Russia, 1921-22.

*Cas de typhus exanthématique
et de
fièvre récurrente
déclarés sur les
chemins de fer en Russie
1921-22*

■ typhus exanthématique.
▨ fièvre récurrente.



There are three water-boilers in the station, and wood is plentiful, but the supply of water in the district is from a pond which should be cleansed.

Sanitary control stations are organised on the railway junctions at Fastov, Berdyczow, Korosten, Ploskirow.

There are two isolation stations on the railway line Jmerinka-Odessa, namely, Birsula (50 beds in the Isopropunct and 25 in the railway isolation hospital) and Rasdelnaya (25 beds in the Isopropunct). In Odessa itself there are 15 beds in the Isopropunct, 50 in the railway hospital, with 25 additional beds now in preparation and a helios disinfecting apparatus.

(h) *Conditions of Frontier Traffic.*

To summarise, there are about 5,225 beds for epidemic cases in use at the principal railway stations in the western frontier zone.

Disinfecting materials and apparatus and bathing provision are very scarce.

This accommodation has to meet the needs of the organised and uncontrolled migration of the population.

It should be remembered that the number of repatriated persons in 1921 was as follows:—

	460,000	returned to Poland,
	180,481	» » Latvia,
	67,000	» » Lithuania,
	51,372	repatriated by the International Red Cross,
giving a total of	758,853.	

This number only represents the organised repatriation. There exists, besides, an uncontrolled movement, and, up to date, no means have been found to prevent the movement of people who, desiring to escape from famine, move by train in any direction, without any other hindrance than that of obtaining a place. They are divided into two groups:

1. Those who, having papers to cross the frontier, do not wait for echelons to be formed, or who hope to get papers on arrival.

2. Those who flee to where they imagine food will be more plentiful, either to buy and take back to their families, or in the hope of obtaining work in a new area; or, again, people with no clear idea of where they wish to go.

In their journey they infect trains and other passengers. In any town at which they stop, or at any stations where they change trains, they sell some of their clothes in order to buy food.

The following is an account of how the States which are the destination of the repatriated people are prepared to deal with the mass movements.

2. ESTHONIA.

Communication between Russia and Esthonia is either by rail at Narva or through the port of Riga. At the latter there is a large naval quarantine station. At Narva there are five quarantine stations in full commission; four of these are directly under the Esthonian Government and the fifth belongs to the International Red Cross and is specially intended for the prisoners of war.

These four quarantine stations can hold 1,000 persons. The average length of stay in these stations is from 12 to 14 days.

All ships entering the ports of Esthonia are visited by doctors, and persons found to be suffering from infectious diseases are placed in quarantine.

3. LATVIA.

Refugees and prisoners of war from other countries also pass through Latvia. Repatriated persons are isolated at Rositten or at Riga. The processes of delousing, etc., the transport to Riga, and the examination of papers, takes about five days. Medical flying columns composed of doctors, surgeons, sisters and nurses have been established.

There were three columns in 1920 at Lettgallen and four in Courland, and in 1921 there were two in Courland.

There are 726 doctors in Latvia, *i. e.*, one doctor to 2,500 inhabitants.

4. LITHUANIA.

The only quarantine station in Lithuania is at Obeliai, through which all returning refugees have to pass. In 1921, 67,000 persons were repatriated. This quarantine station can hold 1,200 persons. A hospital of 100 beds is attached to the quarantine station.

At the beginning of 1922 there were 37 hospitals with a total of 1,750 beds for the whole of Lithuania. The medical service consists of 397 doctors and 235 health officers.

5. POLAND.

The anti-epidemic campaign in Poland is in the hands of the Chief Epidemic Commissariat. The Commissariat has at present 122 hospitals with 11,730 beds, and a reserve of 1,485 beds in the Red Cross Military Hospitals, *i. e.*, a total of 12,915 beds. Four hospitals at:—

Baranowicze	1,000 beds
Bialystok	800 »
Rovno	400 »
Dorohusk	300 »

giving a total of 2,500 beds, are reserved for those recently repatriated. 118 hospitals with 7,930 beds are at work in the eastern districts.

The proportion of the number of beds in relation to the number of inhabitants in the three eastern departments is as follows:—

<i>Department of Novogrodek:</i>	1 bed to 1,550 inhabitants
<i>Department of Polesia:</i>	1 » » 1,375 »
<i>Department of Volhynia:</i>	1 » » 1,950 »

The Commissariat has organised in each hospital a flying column of 10 beds which is always ready to be sent to places attacked by the epidemic. This column, when it reaches its destination, occupies any quarters available. Sometimes it requisitions a house; often it occupies a destroyed railway

station or a school which has been closed on account of the threatened epidemic, and, on occasion, if other accommodation is not available, it occupies the railway carriages.

Finally, the Commissariat has organised a type of column which is more mobile and more suitable to local conditions. These columns include in their outfit an apparatus of the cupboard type for dry disinfection, and, instead of the baths and pails used hitherto, possess a douche apparatus of the type of military douche baths.

Up to the present the Commissariat has mobilised 60 columns in the frontier districts, 15 in the Vilna, 20 in the Grodno, 10 in the Kowel and 10 in the Lwow regional commissariat.

In view of the possible danger of a cholera epidemic on Polish territory, the Commissariat has specially recommended directors of departmental health offices to supervise the execution of certain of the Commissariat's instructions:—

1. Preventive vaccination. — Vaccination is compulsory for all the hospital staff, whether in epidemic or other hospitals, for the sanitary staff, the disinfecting staff, delousing and drainage columns and of the night shelters, for sailors, for railway servants, for police, for the medical services, for servants in bathing establishments, for prison servants, for prisoners, etc.

2. Instructions have been issued regarding the maintenance of cleanliness in houses, courtyards, on the pavements, etc.

3. Orders have been given for the organisation of sanitary control of passengers arriving from the East.

4. Instructions have been issued regarding wells.

Active propaganda has been started with scientific and popular pamphlets to instruct the medical staff and the public in the methods adopted for the campaign against cholera.

There are epidemiological institutions and bacteriological laboratories at Warsaw, Cracow, Lwow, Lublin, Baranowicze, Rovno and Tezew, Thorn, Grudziatz.

The *repatriation* is organised on the following lines:

There are two types of entrance stations for persons repatriated from Russia to Poland: (*a*) the stations on the railways and (*b*) the stations on the roads. The former are naturally the more important. There are two: one at Baranowicze and one at Rovno. A camp is being organised at Bialistok as an annex to the quarantine station at Baranowicze. The Dorohusk station is already in existence as an annex to the Rovno station.

These stations are divided into two principal sections: the dirty part where the repatriated persons arrive, and the clean part into which they pass after having been washed, deloused, vaccinated and given clean linen.

There are road stations at the following five points:— Podwoloczyska, Holownica, Rokitno, Silniawka and Mikaszewicze. These stations are organised in the same way as the stations on the railways but on a smaller scale.

The repatriated persons proceed from these quarantine stations either directly to the villages, or they pass by stages through a certain number of the large cities in Poland before reaching their homes. All these stages are provided with isolation quarters, epidemic hospitals and baths.

6. ROUMANIA.

At the head of the health organisation in Roumania is a Civilian Health Board under the Ministry of the Interior. This Office has general organisations for inspection in all the provinces by doctors

attached to the various districts, towns and rural communes. A large number of the hospitals are the property of the State.

The doctors and health commissioners work directly under the Health Board. The Board possesses three flying hospitals, with 25,287 beds, namely:—

Former Kingdom: 190 hospitals with 5,858 beds, *i. e.*, 1 bed to 1,348 inhabitants.

Transylvania: 69 hospitals with 10,977 beds *i. e.*, 1 bed to 466 inhabitants.

Bessarabia: 105 hospitals with 3,479 beds, *i. e.*, 1 bed to 870 inhabitants.

Bukovina: 10 hospitals with 970 beds.

In addition to these State hospitals there are the hospitals of Bucarest, Jassy, Ploesti, Brancovan and Sinaia, which are private institutions, and also a considerable number of Jewish hospitals.

The provincial health service has been extremely well organised, especially since it was possible to complete the panels of doctors by enrolling a number of Russian refugee doctors.

For the time being, the sanitary protection of the Roumanian frontier is entrusted to the army. The army possesses full authority in a zone 25 kms. deep only. The cordon on the Russo-Roumanian frontier may be regarded as secure. The guarding of the frontier is simplified by the fact that it follows the river Dniester.

Nevertheless, a certain number of refugees escape the vigilance of the frontier stations and succeed in entering the country. When discovered, they are sent to camps in the interior of the country, where they are subject to strict sanitary supervision.

When the Roumanian frontier is reopened it will require quarantine establishments of some size, as the stations which were formerly in use will not be in a position to cope with the large numbers.

III.

STATISTICAL TABLES AND DIAGRAMS OF EPIDEMIC DISEASES, JANUARY-APRIL 1922

1. **Typhus in Central and Eastern Europe.**

2. **Relapsing Fever in Central and Eastern Europe.**

(a) Diagram of Typhus and Relapsing Fever in Poland and the Baltic Republics, 1921-22.

(b) Diagram of Typhus and Relapsing Fever in Russia, 1921-22: I — Northern and Central Regions.

(c) Diagram of Typhus and Relapsing Fever in Russia, 1921-22: II — Southern Regions.

3. **Enteric Fever in Central and Eastern Europe.**

4. **Cholera in Russia.**

TABLE 1.

Cases of Exanthematic Typhus notified in Central and Eastern Europe.

NOTE. — The figures in *italics* indicate the number of deaths, those in ordinary type indicate the number of cases notified.

Country or province	Population	1921 January-March	1922 January-March	1922 January	1922 February	1922 March	1922 April
GERMANY	59,182,000	127	282	229	26	27	20
CZECHOSLOVAKIA:							
West of the Carpathians	9,997,000	19 <i>0</i>	44 <i>4</i>	30 <i>2</i>	9 <i>2</i>	5 <i>0</i>	10 <i>0</i>
East of the Carpathians.	3,599,000	506 <i>52</i>	193 <i>14</i>	34 <i>2</i>	11 <i>4</i>	148 <i>8</i>	90 <i>16</i>
CZECHOSLOVAKIA, total	13,596,000	525 <i>52</i>	237 <i>18</i>	64 <i>4</i>	20 <i>6</i>	153 <i>8</i>	100 <i>6</i>
AUSTRIA	6,140,000	59 <i>8</i>	15 <i>1</i>	10 <i>1</i>	2 <i>0</i>	3 <i>0</i>	1 <i>0</i>
HUNGARY	7,946,000	29 —	14 <i>3</i>	1 <i>0</i>	4 <i>1</i>	9 <i>2</i>	— —
ITALY	38,835,000	18	0	0	0	0	0
FINLAND	3,332,000	6	1	1	0	0	—
ESTHONIA	1,250,000	—	97	36	12	49	15
LATVIA	1,728,000	510	678	288	178	212	275
LITHUANIA	2,700,000	898 —	1,959 <i>134</i>	571 <i>31</i>	824 <i>73</i>	564 <i>30</i>	490 <i>30</i>
DANZIG	330,000	3 —	3 <i>1</i>	2 <i>0</i>	0 <i>1</i>	0 <i>0</i>	0 <i>0</i>
POLAND:							
Western Zone	3,058,000	22 <i>0</i>	25 <i>1</i>	10 <i>1</i>	9 <i>0</i>	6 <i>0</i>	8 <i>1</i>
West-Central Zone	6,780,000	3,087 <i>302</i>	1,209 <i>131</i>	444 <i>53</i>	400 <i>43</i>	365 <i>35</i>	319 <i>34</i>
East-Central Zone	9,191,000	9,848 <i>1,008</i>	6,081 <i>560</i>	1,612 <i>153</i>	2,354 <i>211</i>	2,415 <i>196</i>	1,606 <i>144</i>
of which City of Warsaw	931,000	496 <i>53</i>	638 <i>94</i>	245 <i>38</i>	237 <i>36</i>	156 <i>20</i>	108 <i>13</i>
Eastern Zone	6,377,000	8,080 <i>519</i>	12,962 <i>980</i>	4,386 <i>436</i>	4,242 <i>329</i>	4,334 <i>215</i>	3,720 <i>169</i>
POLAND, total.	25,406,000	21,037 <i>1,829</i>	20,277 <i>1,672</i>	6,452 <i>643</i>	7,005 <i>583</i>	6,820 <i>446</i>	5,653 <i>348</i>

TABLE 1 (concluded).

Cases of Exanthematic Typhus notified in Central and Eastern Europe.

NOTE. — The figures in *italics* indicate the number of deaths, those in ordinary type indicate the number of cases notified.

Country or province	Population	1921 January-March	1922 January-March	1922 January	1922 February	1922 March	1922 April
BULGARIA	4,861,000	—	194	37	107	50	—
CONSTANTINOPLE	1,300,000	62	98	30	27	41	—
RUSSIA:							
Northern Region	3,287,000	6,299	8,061	2,185	2,665	3,211	—
North-Western Region	3,738,000	6,348	8,853	2,933	2,770	3,150	—
of which the City of Petrograd	706,000	1,597	3,392	1,517	1,216	659	—
Western Region	5,032,000	29,802	13,597	4,923	4,503	4,171	—
UKRAINIA	27,000,000	81,497	68,088	—	—	—	—
Crimea	—	3,156	—	—	508	1,345	—
Central Region	14,762,000	38,116	67,732	15,404	23,377	28,951	—
of which City of Moscow	1,028,000	1,672	9,870	2,404	3,255	4,211	—
South-Central Region	11,592,000	24,943	26,726	7,080	8,479	11,167	—
East-Central Region	7,269,000	25,847	37,603	9,511	11,156	16,936	—
Volga Region	13,015,000	32,175	44,818	17,339	11,499	15,980	—
of which Government of Samara	2,979,000	2,153	11,652	4,178	3,300	4,174	—
Ural Region	8,490,000	13,051	48,121	14,668	15,897	17,556	—
of which the Government of Perm	1,985,000	3,468	19,302	6,071	5,943	7,288	—
Siberia	9,258,000	13,809	29,175	10,910	9,551	8,714	—
Republics of Kirghiz and Turkestan	12,260,000	2,081	29,192	5,164	15,260	8,768	—
Caucasus Region	5,170,000	625	8,790	3,116	2,775	2,899	—
Black Sea Region	—	338	8,308	1,693	2,738	3,877	—
Red Army and Red Navy	—	51,169	16,858	6,013	6,751	4,094	—
Railways and Waterways	—	11,617	161,832	18,630	61,930	81,785	—
Prisons	—	995	1,302	378	426	498	—
RUSSIA, Total	124,000,000	341,838	580,909	119,947	180,285	213,102	—

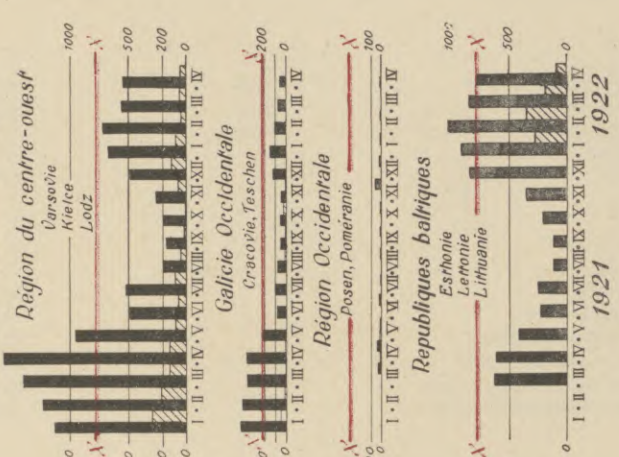
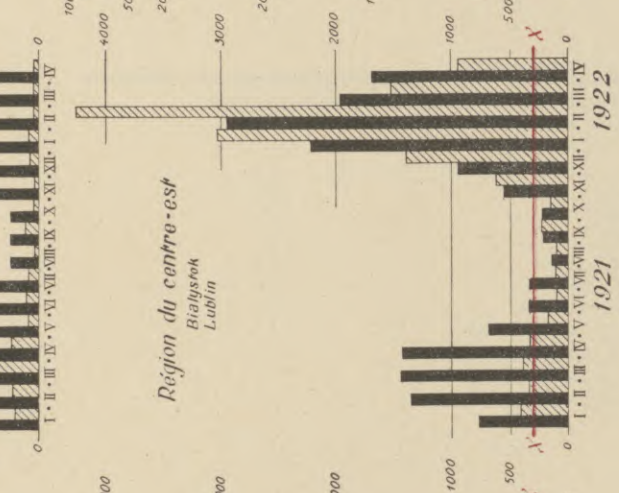
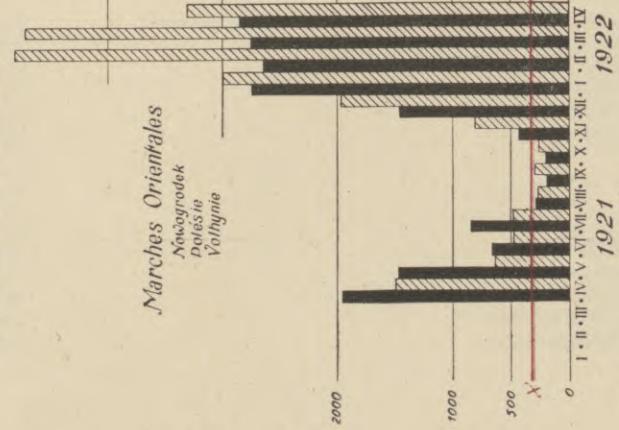
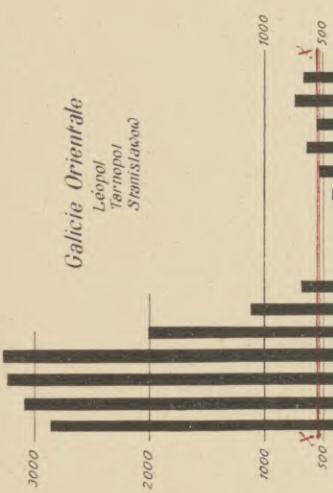
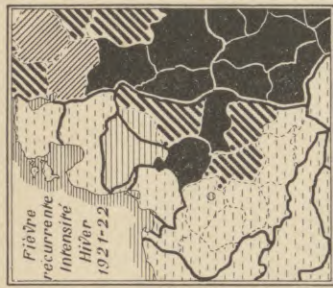
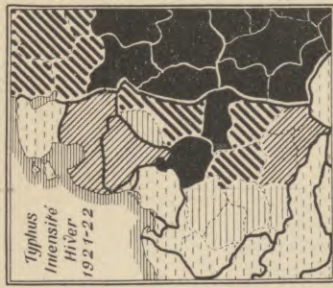
TABLE 2.

**Cases of Relapsing Fever
notified in Central and Eastern Europe.**

NOTE. — The figure in *italics* indicate the number of deaths, those in ordinary type the number of cases notified.

Country or Province	1921 January-March	1922 January-March	1922 January	1922 February	1922 March	1922 April
FINLAND	0	0	0	0	0	0
LATVIA	99	43	28	7	8	12
ESTHONIA	—	51	29	4	18	3
LITHUANIA	372	742	229	357	156	56
	—	23	8	12	3	0
POLAND:						
Western Zone	64	3	3	0	0	0
	0	0	0	0	0	0
West-central Zone	456	77	23	25	29	86
	11	1	1	0	0	0
East-central Zone	1,468	4,746	910	2,669	1,167	368
	37	206	79	62	65	31
of which the City of Warsaw	45	128	72	29	27	16
	1	8	5	1	2	0
Eastern Zone	687	17,386	5,332	6,494	5,560	4,205
	20	710	250	295	165	123
POLAND, total.	2,675	22,212	6,268	9,188	6,756	4,659
	68	917	330	357	230	154
RUSSIA:						
Northern Region	2,527	3,765	1,421	1,201	1,143	—
North-Western Region	3,554	4,313	1,816	1,206	1,291	—
of which the City of Petrograd	2,057	1,910	1,048	667	195	—
Western Region	24,451	12,516	5,040	5,062	2,414	—
UKRAINIA	149,431	77,834	—	—	—	—
Crimea	5,296	826	—	308	518	—
Central Region	17,901	37,023	11,559	13,573	11,891	—
of which the City of Moscow	1,201	7,826	2,632	2,766	2,428	—
South-Central Region	40,401	40,853	12,557	13,765	14,531	—
East-Central Region	9,510	16,416	4,997	5,939	5,480	—
Volga Region	19,264	34,445	14,210	8,486	11,749	—
of which the Government of Samara	2,096	14,077	5,583	3,371	5,123	—
Ural Region	12,175	35,125	13,350	11,559	10,216	—
of which the Government of Perm	894	4,889	1,807	1,763	1,319	—
Siberia	16,124	27,050	10,192	8,925	7,933	—
Republics of Kirghiz and Turkestan	2,258	45,140	12,937	20,886	11,317	—
Black Sea Region	771	13,516	2,984	5,078	5,454	—
Caucasus Region	1,115	10,513	2,713	4,025	3,775	—
Red Army and Red Navy	216,402	25,317	14,543	8,208	8,599	—
Railways and waterways	12,995	140,127	17,082	53,506	69,539	—
Prisons	3,969	2,791	859	862	1,070	—
RUSSIA, total	538,144	527,570	126,260	162,589	166,920	—

(a) Cases of Typhus and Relapsing Fever notified in Poland and the Baltic Republics, 1921-22.



■ typhus ▨ fièvre récurrente

X — X' repris. 1 cas par 10.000 habitants.

(b) Cases of Typhus and Relapsing Fever notified in Russia, 1921-22.
 I. Northern and Central Regions.



■ typhus ▨ fièvre récurrente.

X-X représ. 1 cas par 10.000 habitants.

(c) Cases of Typhus and Relapsing Fever notified in Russia, 1921-22.
 II. Southern Regions.



TABLE 3.

Cases of Enteric Fever notified in Central and Eastern Europe.

NOTE. — The figures in *italics* indicate the number of deaths, those in ordinary type the number of cases notified.

Country or Province	Year 1921	November 1921	December 1921	January 1922	February 1922	March 1922	April 1922
HOLLAND	2,004 <i>282</i>	171 <i>23</i>	102 <i>14</i>	50 <i>7</i>	53 <i>10</i>	91 <i>4</i>	50 <i>14</i>
BELGIUM	1,429	—	—	42	53	53	45
GERMANY	18,828	1,944	872	583	553	795	532
CZECHOSLOVAKIA:							
West of the Carpathians. . .	6,105 <i>546</i>	724 <i>60</i>	492 <i>55</i>	344 <i>29</i>	251 <i>31</i>	225 <i>28</i>	292 <i>39</i>
East of the Carpathians . . .	3,102 <i>273</i>	534 <i>53</i>	390 <i>31</i>	237 <i>17</i>	180 <i>14</i>	198 <i>22</i>	181 <i>13</i>
CZECHOSLOVAKIA, total . . .	9,207 <i>819</i>	1,258 <i>113</i>	882 <i>86</i>	581 <i>46</i>	431 <i>45</i>	423 <i>50</i>	473 <i>52</i>
AUSTRIA	4,288 <i>404</i>	359 <i>39</i>	94 <i>10</i>	168 <i>17</i>	81 <i>13</i>	119 <i>16</i>	136 <i>23</i>
HUNGARY	6,860 —	902 <i>118</i>	479 <i>66</i>	362 <i>32</i>	128 <i>24</i>	124 <i>18</i>	— —
SWITZERLAND	451	61	16	8	5	11	15
ITALY	30,799	5,369	1,862	1,108	550	654	548
FINLAND	1,341	98	41	106	53	57	55
ESTHONIA	1,183	81	120	128	50	63	36
LATVIA	1,431	89	102	112	62	48	47
LITHUANIA	—	96 <i>5</i>	123 —	127 <i>3</i>	176 <i>3</i>	100 <i>2</i>	119 <i>8</i>
DANZIG	179 <i>19</i>	12 —	11 —	9 <i>1</i>	8 <i>2</i>	3 <i>0</i>	3 <i>1</i>
POLAND:							
Western Zone	1,005 <i>88</i>	157 <i>22</i>	88 <i>4</i>	58 <i>1</i>	51 <i>3</i>	25 <i>6</i>	57 <i>2</i>
West-Central Zone	10,955 <i>943</i>	1,509 <i>177</i>	697 <i>71</i>	518 <i>50</i>	479 <i>65</i>	357 <i>38</i>	358 <i>32</i>
East-Central Zone	10,918 <i>899</i>	1,383 <i>142</i>	883 <i>106</i>	657 <i>66</i>	453 <i>58</i>	426 <i>46</i>	380 <i>48</i>
of which the City of Warsaw	1,103 <i>183</i>	131 <i>25</i>	65 <i>6</i>	56 <i>10</i>	25 <i>12</i>	29 <i>4</i>	29 <i>6</i>
Eastern Zone	6,764 <i>371</i>	927 <i>32</i>	918 <i>66</i>	1,029 <i>56</i>	825 <i>37</i>	846 <i>33</i>	683 <i>49</i>
POLAND, total	29,642 <i>2,301</i>	3,976 <i>373</i>	2,586 <i>247</i>	2,262 <i>173</i>	1,808 <i>163</i>	1,654 <i>123</i>	1,478 <i>131</i>
BULGARIA	—	216 <i>30</i>	267 <i>40</i>	206 <i>35</i>	94 <i>19</i>	—	—
CONSTANTINOPLE	—	130 <i>7</i>	38 <i>4</i>	— <i>2</i>	— <i>2</i>	— <i>4</i>	— <i>4</i>

TABLE 3 (Concluded).

Cases of Enteric Fever notified in Central and Eastern Europe.

NOTE. — The figures in *italics* indicate the number of deaths, those in ordinary type the number of cases notified.

Country or Province	Year 1921	November 1921	December 1921	January 1922	February 1922	March 1922	April 1922
RUSSIA:							
Northern Region	4,285	319	186	526	—	—	—
North-Western Region	3,580	291	241	274	—	—	—
of which City of Petrograd	411	134	50	33	—	—	—
Western Region	16,321	394	323	789	—	—	—
UKRAINIA	135,418	12,951	6,507	—	25,949	—	—
Crimea	2,728	—	—	—	—	—	—
Central Region	41,532	4,009	2,478	2,697	—	—	—
of which City of Moscow	3,246	288	365	435	—	—	—
South-Central Region	61,070	2,929	3,921	5,513	—	—	—
East-Central Region	41,476	1,176	306	1,273	—	—	—
Volga Region	37,155	3,355	2,823	3,913	—	—	—
of which the Gov. Samara	10,493	1,241	1,314	2,256	—	—	—
Ural Region	24,822	5,279	2,249	6,259	—	—	—
of which Gov. Chelyabinsk	8,647	2,488	223	863	—	—	—
Siberia	20,635	2,605	—	—	—	—	—
Republics of Kirghiz and Turkestan	4,338	—	2,318	494	—	—	—
Black Sea Region	1,664	118	138	765	—	—	—
Caucasus Region	3,582	453	—	—	—	—	—
Red Army and Red Navy	18,573	624	—	—	—	—	—
Railways and Waterways	24,320	2,935	3,580	1,242	—	—	—
Prisons	347	2	15	37	—	—	—
RUSSIE, total	411,546	37,440	25,085	24,456	—	—	—

TABLE 4.

Cases of Cholera notified in Russia, 1921-1922.

A report received from the Russian People's Health Commissariat stated that 3,301 cases of cholera were notified in Russia, including Ukrainia, during ten weeks ending May 6th, 1922. The figures relating to cholera cases notified in April in the following table, extracted, as were the other figures in the table, from the official returns of the People's Health Commissariat, are thus obviously very far from complete.

Governments	Total 1921	January 1922	February 1922	March 1922	April 1922
Northern Region	20	0	0	0	0
North-Western Region	53	0	0	0	0
of which the City of Petrograd. . .	36	0	0	0	0
Western Region	34	0	0	0	0
Ukrainia	10,341	154	197	545	343
Crimea	46	0	0	0	0
South-Central Region	20,046	0	38	42	29
Central Region	1,858	0	0	1	0
of which the City of Moscow. . . .	312	0	0	0	0
East-Central Region	1,458	12	0	0	0
Volga Region	41,804	3	0	31	1
of which the Gov. of Samara. . . .	15,690	3	0	22	0
Ural Region	36,025	6	1	99	4
Black Sea Region	6,837	38	52	194	62
Caucasus Region	7,424	0	1	53	9
Republics of Kirghiz and Turkestan. .	19,456	5	91	75	—
Siberia	9,024	0	0	0	0
Red Army.	4,427	174	—	—	—
Red Navy	169	0	—	—	—
Railways	20,017	21	12	154	15
Waterways	3,111	0	0	0	0
Prisons	338	0	0	0	0
Total	182,488	413	392	1,094	463

IV.

**INFLUENZA MORTALITY IN EUROPEAN CITIES
DURING THE WINTER 1921-1922**

V.

Table indicating: (a) the Number of Deaths caused by Influenza in European Cities during the Winter 1921-1922; and (b) the Excess of Deaths from all causes over the weekly average for the five weeks ending October 30th, 1921.

Note. — The maximum figures are indicated in heavy type.

Population in thousands	London 4,514		Bristol 382		Birmingham 936		Liverpool 817		Manchester 744		Leeds 466	
	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.
Week ending												
November 5th	6	64	1	12	1	-5	1	13	4	27	1	9
» 12	13	274	3	8	2	-4	0	23	2	32	0	4
» 19	17	559	0	19	1	7	3	92	2	58	0	40
» 26	26	449	2	25	1	17	4	45	3	42	4	37
December 3	29	725	1	-1	5	21	1	43	6	59	5	71
» 10	14	507	4	39	6	8	0	100	7	72	14	82
» 17	43	403	1	14	3	-2	4	45	6	78	35	116
» 24	54	519	0	9	4	1	4	41	10	48	28	114
» 31	151	721	1	13	4	33	3	66	14	66	14	100
January 7	354	1,294	5	17	8	47	2	56	27	73	21	83
» 14	551	1,850	19	89	24	111	11	59	33	117	17	66
» 21	443	1,605	37	132	42	144	14	121	52	201	10	66
» 28	320	1,146	53	141	57	184	25	172	36	111	9	71
February 4	191	786	47	117	46	148	38	205	35	126	11	46
» 11	109	542	26	66	52	152	43	273	34	82	5	41
» 18	92	760	18	76	46	161	54	335	21	96	6	68
» 25	77	596	11	50	29	110	43	193	22	89	10	50
March 4	49	522	6	32	16	68	16	174	16	77	6	69
» 11	30	363	5	13	13	38	10	68	7	53	3	29
» 18	21	347	10	19	10	46	6	54	5	67	2	43
» 25	17	391	4	23	7	37	4	60	4	67	2	49
April 1	21	541	1	26	12	110	3	27	5	67	3	54
» 8	20	638	5	55	5	84	8	89	6	81	7	81
» 15	23	570	0	36	5	82	6	71	6	83	6	78
» 22	15	530	4	15	1	84	6	44	3	75	4	56
» 29	15	451	1	40	4	116	3	18	5	65	3	46
May 6	7	443	1	23	4	73	2	17	2	85	2	38
» 13	12	334	3	12	6	69	1	30	0	64	4	43
» 20	5	162	0	0	1	48	1	22	1	22	0	23
» 27	7	302	2	30	3	-1	3	-5	0	27	3	7
Total, 26 weeks ending April 29th.	2,701	17,153	265	1,085	404	1,798	312	2,487	371	2,012	226	1,569
Rate per 100,000 population as for a year.	120	760	139	568	86	384	76	609	100	541	97	673

Table indicating (a) the Number of Deaths caused by Influenza in European Cities during the Winter 1921-1922 ; and (b) the Excess of Deaths from all causes over the weekly average for the five weeks ending October 30th, 1921 (Continued).

Note. — The maximum figures are indicated in heavy type.

Population in thousands	Sheffield 519		Edinburgh 421		Glasgow 1,038		Dublin 427		Belfast 425		Christiania 261	
	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.
Week ending												
November 5th	1	20	0	7	3	-21	1	-34	1	23	0	5
» 12	0	14	0	22	0	-38	1	-25	0	15	0	13
» 19	4	19	0	68	4	24	0	3	2	33	0	10
» 26	3	18	1	64	1	5	1	- 4	3	3	0	- 5
December 3	14	41	6	32	3	38	0	-11	1	2	0	11
» 10	31	106	1	69	3	37	2	21	1	- 1	0	5
» 17	40	92	3	21	3	2	3	62	1	-15	0	20
» 24	30	92	1	41	4	6	8	71	1	- 3	0	19
» 31	19	32	2	33	5	72	24	125	5	4	0	9
January 7	12	47	2	49	25	162	28	100	4	33	2	21
» 14	12	41	14	82	80	406	28	84	2	46	3	39
» 21	9	19	72	211	202	818	13	76	7	29	21	56
» 28	5	37	116	299	183	622	14	76	7	54	25	91
February 4	4	41	99	253	130	524	16	50	22	80	12	25
» 11	5	41	48	128	48	216	11	39	28	118	12	32
» 18	5	3	24	98	28	173	7	47	50	137	2	34
» 25	5	25	10	72	16	134	9	80	30	136	10	30
March 4	4	29	8	68	16	120	13	64	19	78	1	15
» 11	1	3	5	64	5	57	4	48	0	43	0	13
» 18	3	21	3	48	5	87	9	61	10	59	0	29
» 25	3	37	3	59	2	74	6	73	4	34	1	15
April 1	1	68	3	63	4	83	2	34	2	40	0	4
» 8	1	64	0	48	3	94	6	108	5	55	0	28
» 15	1	65	4	58	2	127	3	106	1	35	0	21
» 22	2	49	2	60	2	84	2	76	1	27	1	22
» 29	1	58	0	51	1	68	3	23	1	36	1	16
May 6	3	28	2	26	1	73	2	44	0	31	0	22
» 13	3	40	2	25	2	53	2	32	3	16	0	25
» 20	3	30	1	33	1	- 1	1	3	0	7	0	21
» 27	1	19	1	29	1	-10	3	- 9	1	1	0	23
Total, 26 weeks ending April 29th. . . .	216	1,082	427	2,068	778	3,974	214	1,353	208	1,101	91	638
Rate p. 100,000 population as for a year .	83	417	203	982	150	766	100	634	98	518	69	489

Table indicating : (a) the Number of Deaths caused by Influenza in European Cities during the Winter 1921-1922 ; and (b) the Excess of Deaths from all causes over the weekly average for the five weeks ending October 30th, 1921 (Continued).

Note. — The maximum figures are indicated in heavy type.

Population in thousands	Copenhagen 562		Stockholm 422		Amsterdam 684		Antwerp 340		Berlin 1,945		Breslau 547	
	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.
Week ending												
November 5	0	13	0	- 5	0	13	0	- 9	2	-24	1	-28
» 12	1	16	0	7	1	24	1	- 1	0	5	1	10
» 19	0	6	0	- 6	0	64	1	21	1	73	3	36
» 26	0	14	0	3	1	63	0	27	2	-28	3	22
December 3	0	8	0	12	0	102	1	27	2	34	2	56
» 10	0	32	1	6	1	132	1	36	2	33	10	23
» 17	0	59	1	8	3	102	0	14	6	248	14	35
» 24	0	23	1	23	2	56	4	22	9	-11	32	130
» 31	0	7	1	19	3	62	2	23	74	292	53	149
January 7	1	58	1	- 4	1	55	13	53	159	327	41	152
» 14	4	38	9	17	13	94	17	72	151	378	22	94
» 21	6	30	26	61	37	176	20	78	108	218	8	28
» 28	22	45	28	83	81	261	18	84	64	148	10	42
February 4	31	94	35	80	63	270	5	54	36	85	13	46
» 11	29	71	20	44	23	136	6	36	49	348	9	37
» 18	14	96	13	38	13	73	0	53	29	-18	9	54
» 25	13	61	10	48	9	52	1	55	26	558	5	61
March 4	12	57	8	23	2	43	1	33	22	214	10	75
» 11	11	52	5	11	6	67	1	24	29	241	5	45
» 18	0	26	3	14	5	37	0	27	10	171	4	103
» 25	5	50	2	5	0	22	2	16	11	153	5	74
April 1	0	58	0	11	1	44	0	23	7	163	7	94
» 8	4	54	1	4	0	47	1	28	13	154	9	90
» 15	2	55	0	-1	0	41	0	42	12	186	6	63
» 22	3	72	0	15	2	20	2	28	12	232	3	44
» 29	7	89	3	12	3	37	1	1	5	142	8	113
May 6	7	60	1	7	0	24	—	—	7	92	3	60
» 13	4	47	0	-7	0	37	—	—	7	117	4	48
» 20	4	59	1	10	0	20	—	—	3	98	2	49
» 27	3	51	0	0	0	37	—	—	5	109	2	49
Total, 26 weeks ending April 29th. . . .	155	1,184	165	528	265	2,093	98	865	836	4,322	285	1,548
Rate p. 100,000 population as for a year .	55	421	78	250	39	612	58	509	86	444	104	566

Table indicating : (a) the Number of Deaths caused by Influenza in European Cities during the Winter 1921-1922; and (b) the Excess of Deaths from all causes over the weekly average for the five weeks ending October 30th, 1921 (Continued).

Note. — The maximum figures are indicated in heavy type.

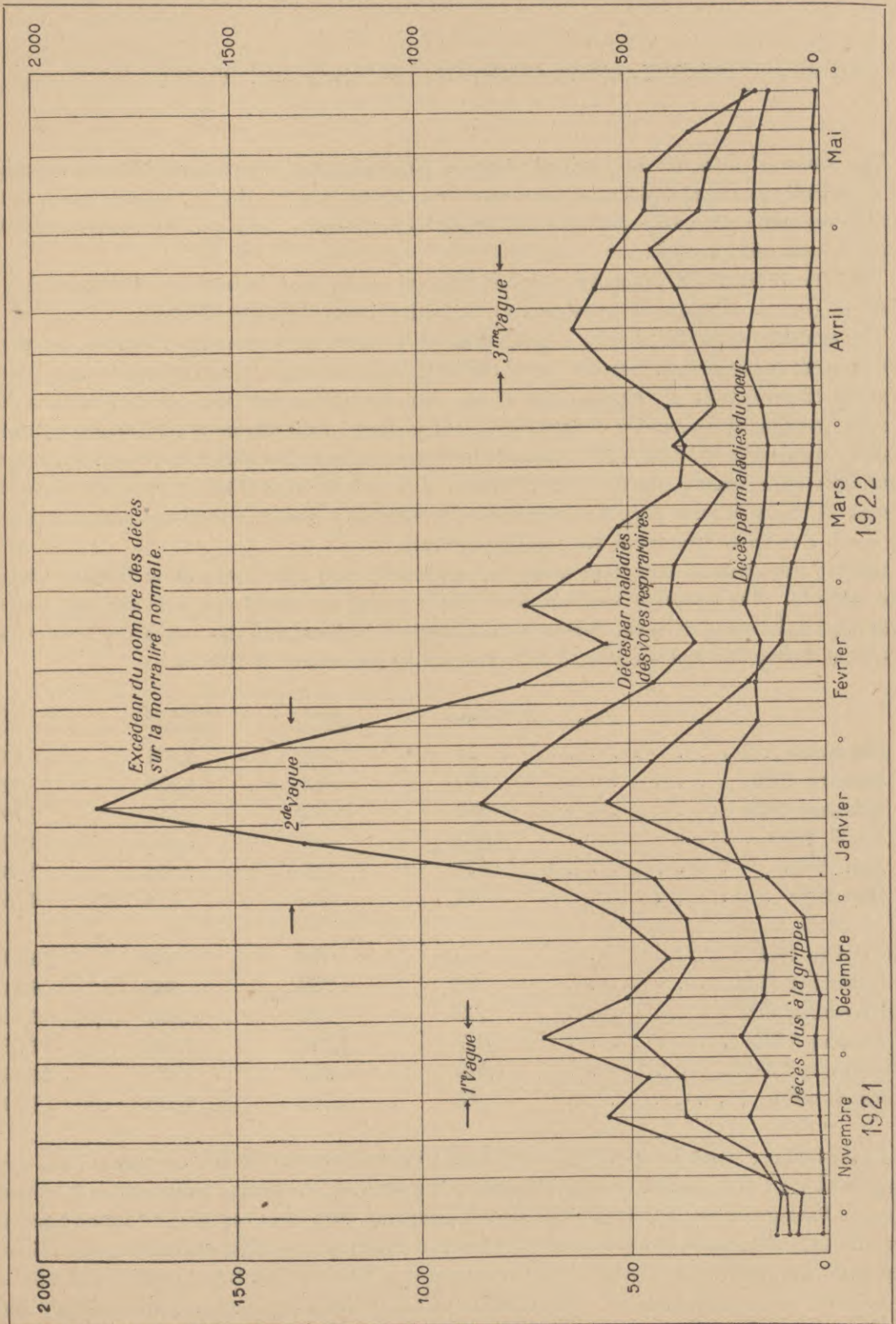
Population in thousands	Dresden 600		Leipzig 630		Hamburg 1,031		Cologne 669		Düsseldorf 422		Munich 670		
	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.	a.	b.	
Week ending													
November	5	1	39	3	13	3	1	3	- 7	1	10	1	10
»	12	1	27	2	33	2	33	5	4	0	-10	3	-12
»	19	1	53	2	19	1	17	4	37	0	- 3	0	12
»	26	0	44	1	27	1	57	3	10	3	4	1	27
December	3	6	64	1	30	6	98	3	49	1	15	1	26
»	10	0	85	4	53	4	15	1	58	4	29	6	56
»	17	4	62	5	37	18	144	5	33	3	0	22	89
»	24	4	65	3	23	64	235	19	56	1	25	28	105
»	31	19	92	17	46	71	240	51	115	14	45	40	100
January	7	38	112	23	64	66	131	53	132	27	87	33	97
»	14	45	95	31	83	38	177	36	70	28	90	19	40
»	21	28	83	35	101	20	83	24	47	21	65	15	37
»	28	17	61	37	101	14	55	16	17	7	28	18	47
February	4	10	50	24	85	13	48	13	45	9	34	7	21
»	11	10	53	13	64	10	119	12	49	3	42	5	8
»	18	5	68	13	88	11	194	16	97	8	46	6	47
»	25	11	72	8	65	10	115	9	77	10	75	6	51
March	4	6	76	7	31	9	77	9	67	5	15	7	67
»	11	4	64	7	45	7	123	7	29	0	35	5	59
»	18	3	51	4	32	2	140	3	26	3	16	4	40
»	25	3	71	9	67	3	100	4	23	3	25	2	35
April	1	10	106	7	62	2	62	5	30	3	26	11	33
»	8	9	88	4	79	7	163	2	23	0	27	4	60
»	15	11	77	3	35	4	133	0	39	2	20	4	14
»	22	5	54	5	67	7	147	3	10	0	11	3	23
»	29	9	75	2	24	5	177	4	18	0	20	3	62
May	6	4	22	0	59	1	62	1	-14	1	12	0	51
»	13	4	72	2	40	3	83	2	6	0	9	1	14
»	20	1	42	4	26	1	60	0	- 5	1	11	2	44
»	27	5	57	0	39	2	84	0	41	0	12	4	49
Total, 26 weeks ending April 29th. . . .	251	1,787	268	1,374	393	2,884	306	1,154	156	777	251	1,154	
Rate p. 100,000 population as for a year .	84	396	85	436	76	560	92	345	74	368	75	345	

Table indicating: (a) the Number of Deaths caused by Influenza in European Cities during the Winter 1921-1922; and (b) the Excess of Deaths from all causes over the weekly average for the five weeks ending October 30th, 1921 (Concluded).

Note. — The maximum figures are indicated in heavy type.

Population in thousands	Frankfurt a/M 471		Lille 201	Lyon 562	Constantinople 1,300	Vienna 1,842		Budapest 936	Prague 689		New-York 5,810		
	a.	b.				a.	a.		a.	b.	a.	b.	a.
Week ending													
November	5	3	10	—	3	0	1	-12	3	2	10	8	92
»	12	1	19	—	5	2	1	-13	1	1	19	—	34
»	19	1	23	—	4	0	0	32	3	2	6	9	140
»	26	1	- 1	—	4	1	0	39	1	1	49	—	95
December	3	3	18	—	4	3	0	34	5	0	48	7	64
»	10	3	24	—	6	0	0	54	3	0	35	3	112
»	17	3	22	—	6	1	3	36	2	2	48	—	157
»	24	14	47	—	5	0	1	74	3	2	56	5	243
»	31	36	88	—	6	0	3	109	10	0	27	6	275
January	7	54	99	0	8	1	1	14	5	1	40	16	397
»	14	39	78	10	9	0	4	61	5	3	52	13	392
»	21	22	66	5	11	4	15	138	9	5	63	15	492
»	28	11	45	20	9	2	25	224	8	8	77	25	434
February	4	8	40	12	9	1	40	390	12	10	109	85	748
»	11	8	17	16	—	—	34	465	—	4	116	128	978
»	18	10	42	3	—	—	35	403	9	0	143	130	892
»	25	4	37	7	—	—	39	364	16	6	145	105	899
March	4	4	46	3	—	—	23	319	9	0	33	54	577
»	11	6	53	1	—	—	14	231	2	2	107	37	561
»	18	2	37	1	—	—	8	197	6	3	62	34	518
»	25	3	40	0	—	—	7	194	4	0	72	23	491
April	1	3	51	0	—	—	3	251	—	0	56	16	445
»	8	4	61	0	—	—	10	190	—	2	110	14	530
»	15	1	36	1	—	—	6	204	—	2	101	17	488
»	22	1	44	0	—	—	3	184	—	1	45	8	357
»	29	3	27	0	—	—	—	—	—	—	—	11	414
May	6	2	29	0	—	—	—	—	—	—	—	—	419
»	13	0	16	0	—	—	—	—	—	—	—	—	—
»	20	2	20	0	—	—	—	—	—	—	—	—	—
»	27	1	20	0	—	—	—	—	—	—	—	—	—
Total, 26 weeks ending April 29th. . . .	245	1,069	—	—	—	—	276	4,182	—	57	1,629	769	10,825
Rate p. 100,000 population as for a year .	104	454	—	—	—	—	30	454	—	17	473	26	371

Deaths from Influenza, Heart Disease and Diseases of the Respiratory Tract, and the Weekly Excess of General Mortality over the Normal in the County of London during the Winter 1921-22.



NOTE ON THE INFLUENZA OUTBREAK DURING THE WINTER OF 1921-22.

The return of influenza in pandemic form in November and December 1921 was synchronous with a markedly increased death rate over a wide area. North-Western Europe appears to have suffered most heavily, although outbreaks have occurred also in America, Asia and Africa, but these for the most part were mild in type.

The time of maximum intensity varied in different places from December to February, but these variations give no evidence of transference of infection in any definite direction.

The epidemic commenced with a great number of fairly mild cases in November, accompanied by an increase in the general mortality rate; the fatal cases, however, do not appear to have presented symptoms characteristic of influenza and at any rate the deaths were not ascribed to that disease. A marked increase in the number of deaths returned as due to heart disease is particularly noteworthy. A similar coincidence was observed in the mild influenza outbreak in London in November 1919, which caused only some twenty deaths a week directly due to influenza; this outbreak was nevertheless accompanied by a seventy per cent. increase in the mortality from heart disease and an abnormally high death rate from diseases of the respiratory tract.

Similar observations were made under the apparently very mild outbreak in Holland during the winter 1920-21. The mortality statistics for Holland during the recent epidemic are very instructive in this respect; below is given the deaths from diseases of the heart and the respiratory tract registered in Holland during the first months of 1920 and during the winter of 1921-22:

	Influenza	Heart Disease	Respiratory Diseases	Deaths from all causes
December 1919	44	548	1,254	7,124
January 1920	106	683	1,525	7,829
February 1920	592	611	1,815	8,469
March 1920	1,042	655	1,992	9,773
April 1920	377	535	1,156	7,209
May 1920	114	517	874	6,557
October 1921	6	508	633	5,871
November 1921	28	739	985	6,811
December 1921	122	932	1,877	8,480
January 1922	1,677	1,141	3,089	12,581
February 1922	1,529	972	2,872	11,147
March 1922	280	703	1,471	7,545

In the table on pages 36-40 the excess of deaths from all causes over the average for the five preceding weeks, when no epidemic was prevalent, is given next to deaths registered as due directly to influenza. The figures for the weeks of maximum incidence have been printed in heavy type, and an extraordinary coincidence of the maxima for the two columns is everywhere in evidence. This regular progression and recession of mortality due to a number of diseases of different organs is all but conclusive evidence of a common cause. The solution of the problem as to what is the primary cause of

this periodical lowering of resisting power on the part of the human body offers an interesting field for further investigation.

The recent outbreak of influenza was not accompanied or followed by any serious outbreak of encephalitis lethargica. The data for Finland, where the declaration of influenza cases has been obligatory since January 1921, are interesting in this connection:

1920-21	Cases of Influenza	Encephalitis lethargica	1921-22	Cases of Influenza	Encephalitis lethargica
December	—	239	October	1,867	9
January	2,016	591	November	9,704	10
February	1,208	233	December	21,719	12
March	1,681	97	January	14,301	8
April	1,256	23	February	9,433	16
May	1,248	9	March	10,177	8
June	1,005	3	April	7,148	6

In regards to age incidence, this epidemic did not differ from that normally observed in influenza outbreaks; the heaviest mortality occurred among persons past middle life and the lowest among children over ten years of age, the configuration of the mortality curve by age conforming roughly to that of the deaths from all causes. No change was observed in the age incidence of deaths from heart disease.

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