A MEDICAL REVIEW OF SOVIET RUSSIA.*

IV.—CHANGE IN TYPE AND INCIDENCE OF DISEASE.

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PART I.

MODIFICATIONS in disease have taken place all over the civilized world as a result of the war, influenza pandemic, and social changes, but not on the same great scale as in the Union of Soviet Socialist Republics (Russia). In no other country were the conditions so bad, and in no other country were the changes in morbidity so enormous. Some diseases became epidemic, others remained unchanged, and a few disappeared altogether.

We have been able to see in Russia the effects of war and famine on all kinds of diseases—surgical, internal, nervous, etc. Some of these changes have been so remarkable, so little has been written about them (even in Russian, almost nothing in English), that I have, during my two and a half years in Russia, collected these facts with a great deal of pains. An enormous number of original MSS., official statistics, and Russian medical articles have been gone over for this purpose, and a certain amount of unpublished detail is included.

The sources of information have been: a large number of original articles written by eminent Russian specialists in the various branches of medicine during the famine, and handed to the author in 1922; the records of the American Relief Administration; inspection trips and observations in the various parts of Russia; statistics of the Soviet Department of Public Health.†

In past wars the greatest destructive element has been disease. Only in the great war and in the Franco-Prussian war of 1870 have the deaths from wounds and from disease been nearly equal. Russia was the exception, if we consider the civil war also; for in 1918-20 there were more deaths from disease than from both the world war and civil war. Dr. Semashko states that, of the 14,000,000 men mobilized, 11,000,000 were lost through wounds and disease together. In 1828 Russia lost in the Russo-Turkish war 80,000 from disease and 20,000 in battle; in 1878 she lost 86,000 from disease and 16,000 in battle (Viry); and in 1917-20, although accurate figures are not available, it is estimated (Karefa-Korbut) that 20,000,000 Russians died, and in 1917-24 40,000,000 died, only a small percentage of which could have been due to the casualties of battle.‡

FACTORS.

The limits of this paper make it possible merely to enumerate the factors underlying the morbid changes. The war in Russia brought with it the usual disease-producing concomitants of war—restriction of food, disorder, physical and mental suffering. These factors were of much greater magnitude in Russia than in any of the other nations. They combined to produce a tremendous effect on the health of the people, probably involving larger numbers and causing more disease than any other war or calamity in the medical history of Europe.†

From 1914 to 1917 the decline in living conditions in Russia was similar to that in the other combatant nations; from 1917 through 1919 there was civil war of greater magnitude and destruction than the previous world war, involving nearly every person in Russia; and from 1919 into the summer of 1923 there was famine and starvation

affecting three-fourths of the people, and accompanied by epidemics of typhus and relapsing fever afflicting one out of every four adults, and of smaller epidemics of cholera and small-pox. These events completely smashed Russia, to say nothing of the other changes consequent upon two social revolutions. During part of this period everyone led the most primitive life and suffered from indescribable physical, mental, and moral hardships. Since 1922 there has been a gradual return toward normal life for the great mass of the Russian people.

National Resistance.—While the disease-producing factors were greater in Russia, the national resistance was less than in the other European countries. (Under this term are included those forces at the disposal of a nation for fighting disease, such as medical personnel, hospitals, field equipment, public health education, national finances.)

Shortage of Doctors.—Although the individual Russian doctor was well educated, the relative number of doctors in pre-war Russia was smaller than in any other civilized country.* The mobilization of doctors and the large number of deaths among them left many districts entirely without medical assistance. For example, in 1921, when the epidemics were raging, in the Penza Government on the Volga, where one of every twelve people was down with fever, there was only one doctor for the 180,000 people.‡

A discussion of the hospitals has already been given.‡ The public health organization which the Soviets inherited from the Tsarist regime was almost nil, and there was thus a strong contrast between Russia and such countries as Germany and Finland. These two countries also were devastated by war, revolution, famine, and disorder, and epidemics appeared in them at the same time as in Russia, but thanks to their highly organized public health systems, and the general education and cleanliness of the people, typhus was soon checked.

VITAL STATISTICS.

The following table shows the high death rate and low birth rate which resulted during the bad years in Russia, as compared with other European countries. The death rate for 1920-22 was, according to Professor C. A. Novosilsky and other Russian authorities, much higher than the recorded figure of 33.2; in many parts of Russia it reached 85 during the worst period.

TABLE I.—Birth and Death Rates, 1913 and 1920-24.

The figures are taken from the Annual Reports of the Registrar-General of England and Wales; from the *Statistisches Jahrbuch für das Deutsche Reich*, 1925; and from the records of the "Statburo," Leningrad. The figures for 1913 are for European Russia, exclusive of Poland and Finland.

	1913.	1920.	1921.	1922.	1923.	1924.
RUSSIA.						
Births ...	44.7	33.0*			42.2	41.1
Deaths ...	22.4	33.2*			22.9	22.9
ENGLAND.						
Births ...	24.0	25.5	22.4	20.6	19.7	18.8
Deaths ...	13.8	12.4	12.1	12.9	11.6	12.2
FRANCE.						
Births ...	19.0					19.2
Deaths ...	17.7					17.2
GERMANY.						
Births ...	27.5	25.9	25.3	22.9	21.0	20.4
Deaths ...	15.0	15.0	13.8	14.2	13.9	12.1
ITALY.						
Births ...	31.7	31.9	30.4	30.0	27.9	
Deaths ...	18.7	18.8	17.5	17.6	15.8	
U.S.A.†						
Births ...	25.6			22.5		
Deaths ...	15.0			11.9		

* Average for 1922-23 for R.S.F.S.R.

† Figures for U.S.A. include only the States in the registration area.

The populations of the chief European countries have doubled or trebled during the past century, as a result of the reduction of death rate.‡ This has been brought about mainly by the control of infectious epidemics and the lowering of infantile mortality.

* The proportion of doctors in Russia was 1 to 6,000; in Germany, 1 to 1,500; in Great Britain, 1 to 1,400; in United States of America, 1 to 800. Many young doctors have been graduated since the revolution, so that the number of physicians in 1925 in Soviet Russia was 29,000, as compared with 14,000 before the war.

* Previous papers on medical and scientific work in Soviet Russia by Dr. Horsley Gantt were published in the *BRITISH MEDICAL JOURNAL* in 1924: I, A Review of Medical Education in Soviet Russia, vol. i, p. 1055; II, Hospitals and Health Conditions, vol. ii, p. 336; III, Scientific Work, vol. ii, p. 533.

† I am indebted to Doctor Semashko and other officials of the Public Health Department for the unrestrained use of their figures. See also N. Semashko: Health in Russia, *Deut. med. Woch.*, 1924, Nos. 4, 7, 8, 11, 17, 18, 22, 27, 32, 37, 46, 51.

‡ Sir Humphry Rolleston called attention in 1916 to some of the factors of war in producing disease (*Practitioner*, January, 1916), and in 1920 to some theories as to the change in type of disease. The reader is referred to these for a fuller discussion and bibliography.

TABLE II.—Population.

	1800.	1910.
Great Britain ...	16,000,000	44,000,000
France ...	27,000,000	39,000,000
Italy ...	17,000,000	34,000,000
Sweden ...	2,000,000	5,000,000

A decline in death rate has taken place also in the decade 1914-24, except in Russia. However, in 1918-19, in practically every country for which we have any record the death rate equalled or exceeded the birth rate, owing to the pandemic of influenza. Although racial and other conditions affect the birth rate, it has been also influenced in Europe by the disastrous circumstances following the war, and in America by increased standard of living and of economic pretensions.

FAMINE AND DEFICIENCY DISEASES.

In addition to the underfeeding of the poor and the general lack of vitamins always present in civilized nations, there was during the world war, in nearly all the combating countries, a widespread caloric deficiency, especially marked in proteins, fats, and milk. In Berlin, in 1917, the rations fell to 1,400 calories.⁴ In America this shortage lasted only one or two years, and to a very limited extent, but in Europe for a much longer time, and in Russia—the Capital of Famine—until 1924, and affected nearly everyone; at one time about 20,000,000 were starving, and in 1920-22 about 10,000,000 died from starvation.

Food Shortage in Russia.

In order to explain the nutritional and other diseases which arose during the famine period I shall give a few details concerning the food shortage. This deficiency began in 1915. After the Soviet revolution in 1917 people in the cities were rationed, and there was little possibility of buying more food as money was abolished and barter prohibited until September, 1921. After this famine reigned. The official ration for the civil population of Leningrad in 1918, 1919, and 1920 is given by a professor of medicine as follows: from 272 to 611 calories, depending upon the employment. The Red soldier who was not in active service was then receiving 1,467.6 calories instead of the normal 4,300. In 1921 the civil ration was raised to 1,500 calories, with a proportion of 75 per cent. carbohydrates, 17 per cent. proteins, and 8 per cent. fats. The quality was poor, consisting mainly of coarse black bread, salt herring, and potatoes, and later of grits made of millet. Salt as an article of diet was absent.

Results of the Famine.

A leading internist of Leningrad gives the following as results of the famine: (1) General loss of weight of 20 to 40 per cent., and the entire disappearance of fat people. (2) Decrease in the capacity for mental work and a decrease in mental activity manifested by apathy, inability to concentrate, impairment of memory, weakness of will, a dulling of the feelings, especially of compassion, love, and the desire to be clean. (3) The development of the famine diseases, "hunger oedema" and "hunger cachexia." These showed a mortality of 50 per cent. (4) The increase in deficiency diseases such as scurvy, noma, and rickets. (5) The increase in some gastro-intestinal diseases—as meteorism, peptic ulcer, acute colitis, and occlusions caused by the indigestible food. These will be discussed under Internal Diseases. (6) Anthropological changes (to be discussed later).

The following is another description of famine disease which I have abstracted from an unpublished account given me by Professor Chernorouisky of the Leningrad Medical Institute:

Marked insufficiency of food lasting for a long time caused rapid loss of weight and splanchnoptosis. When this loss reached a certain degree it resulted in a definite disease—"famine inanition." Typical early symptoms were decrease of sexual activity; in men decrease of libido and impotentia, and in women amenorrhoea; a relaxation of sphincters, particularly of the bladder, causing a frequent desire to micturate.

Further decrease of nutrition led to a non-albuminous oedema, characterized by weakness, apathy, subnormal temperature, bradycardia, anaemia, and polyuria. There was

disturbance of metabolism and an alteration of the capacity of the tissues to retain water.

Famine disease which was not accompanied by oedema ("famine cachexia") showed more pronounced nervous symptoms, and its course was more acute and serious. Professor Chernorouisky concludes that the oedema has a compensatory value.

Gastro-intestinal Disorders.

The change in the nutritional conditions (decrease in proteins and fats, relative increase in carbohydrates, and great increase of indigestible residue) resulted in traumata of the gastro-intestinal tract, and a marked increase in hyperacidity and hypersecretion and gastric and duodenal ulcers; on the other hand, there was a decrease in gastritis, appendicitis, and constipation.

Scurvy.

Scurvy was one of the deficiency diseases least affected by the famine. It was more often seen in hospitals and kitchens where the inmates received a fairly ample caloric ration than in those in whom starvation was more marked but who were not confined to an institution. This was probably because they satisfied their appetite by eating berries, bark, leaves, etc. Scurvy was sometimes seen in the American kitchens where the children received cocoa, sugar, white bread, and evaporated milk.

Noma: Rickets: Pyorrhoea.

Noma increased enormously during the famine, and this was thought to be due to an abrasion resulting from coarse food (as wheat chaff) in a debilitated person. In a hospital at Syzran on the Volga which I inspected in 1922, 20 per cent. of the children had noma. It was always fatal. During the famine period 80 per cent. of the children were said to have rickets. In 1926 it is less prevalent, though still above the pre-war rate. This disease had also increased eightfold in Germany between 1916 and 1923. In Russia I did not see or hear of the keratomalacia and blindness which were present in Germany, owing to the food deficiency, in 1923. Pyorrhoea, which is so common in America, is rarer in Russia, although it has increased markedly in the past few years.

At the present time all these deficiency diseases have practically disappeared, and the feeding conditions are back to what is normal for Russia.

ACUTE INFECTIOUS DISEASES.

Typhus and Relapsing Fever.

The lice- and insect-borne diseases, such as typhus and relapsing fever, and plague had practically disappeared from the earth except as endemics until the world war. With the squalor and malnutrition following the war the first two of these diseases assumed epidemic proportions in Eastern and Central Europe. Even in such ordinarily well ordered countries as Germany and Finland there were epidemics of significant size in 1917-19—for example, there were over 3,000 cases of typhus in Germany in 1919.⁵ In Poland these epidemics were of enormous size, and in Russia, where lice were universal, practically everyone who was not immune was attacked (35,000,000 cases of typhus and relapsing fever together in Russia followed the world war).

Wherever there is constant dirt, lice, and overcrowding, typhus is likely to be present (for example, New York, Ireland, China, India). When these conditions become universal the disease spreads from an endemic into an epidemic. War furnishes ideal conditions for its spread. Sir Humphry Rolleston, former Surgeon Rear-Admiral in the British Navy, says:

"War, by massing together in close quarters large numbers of men, and especially of young recruits, facilitates the spread of infection, and thus fevers which in peace are endemic or sporadic become epidemic; this has been the universal experience, as was shown in the case of typhoid fever in the South African war, of typhus in Serbia, and of paratyphoid and, to a lesser extent, of cerebro-spinal fever among our own men during the present campaign."

Famine also has some effect on the spread of these epidemics. It has often been noticed in Russia that they coincided with famine years. In the recent famine the incidence of the epidemics was remarkably greater in those

districts where the food shortage was most pronounced. For example, in Tsaritzan and Leninsk districts, where the famine was very acute, the number of infectious diseases was much greater than in the adjacent Don and Kopersky districts, even though the population of the two latter was two or three times as great. The only explanation that could be given was their greater food supply (H. Beeuwkes).

TABLE III.—Correlation of Food, Cleanliness, and Infection for the City of Leningrad.

Year.	Population.	Official Ration—Calories.*	Fuel (Relative Amount).	Relative Number of 100 Days.	Infectious Diseases per 1,000 Population.	Deaths from Infectious Diseases in Hospitals per 100 Patients.
1916	2,347,851	3,000	?	100	12.3	6.3
1918	1,434,737	1,800	100	50	21.8	9.3
1919	700,000	1,600	25	14	50.1	17.8

* The actual number of calories received was much lower than the official figures.

The recent epidemic of typhus in Russia was probably the largest on record. The last important epidemic before this was that of 1880-81, when there were 15,000 cases in Leningrad and approximately 3,000,000 in the whole of Russia.

TABLE IV.—Number of Cases of Typhus and Recurrent Fevers, with the Rate per 10,000 Population.

Year.	Typhus Exanthematicus.		Typhus Recurrens.	
	No. of Cases.	Rate.	No. of Cases	Rate.
1913	105,637	7.2	28,773	2.0
1918	141,638		16,662	
1919	2,240,858		227,927	
1920	2,667,500		1,030,624	
1921	545,587		628,199	
1922	1,556,342	158.9	1,675,120	171.0
1923	245,876	18.4	253,130	18.9
1924	126,946	9.5	49,586	3.7
1925 (Jan.—June)	50,000	3.9	10,000	0.7

These official figures are far too low for the years 1918-22; in 1923, when statistics had improved, we found that they should be multiplied by a factor of 2 to 4 to obtain the correct number.*

These epidemics spread from the south northward, affecting the towns more than the country, and reaching their peak during the famine years. The subsidence may be attributed not only to improved living conditions but to the fact that practically everyone who was not immune had been attacked, and perhaps also, as Sir Humphry Rolleston points out,⁷ to the attenuation of the infecting organism. The mortality of typhus was 8 to 9 per cent., and of relapsing fever 4 to 5 per cent., but 14 to 17 per cent. if complicated by paratyphoid.

In 1919 compulsory vaccination of some of the medical personnel (1,000 in Leningrad) was carried out by Handi's method (citratized blood, or vaccine of heated defibrinated blood), and it was alleged that among the vaccinated the morbidity was only one-fifth as great as in those who were not vaccinated, and that no deaths occurred among them.

Typhoid Fever.

In the history of wars, only in the last great war has typhoid fever been an insignificant factor as compared with the casualties from wounds. During the past decade this disease has not increased in Russia. Russian authorities state that there is an antagonism between typhus and

typhoid (Jakoleff). The absolute number of cases for the whole of Russia was:

For 1913 ...	374,862	For 1921 ...	308,000
" 1914 ...	355,000	" 1922 ...	391,815
" 1918 ...	109,000	" 1923 ...	142,012
" 1919 ...	252,000	" 1924 ...	166,399
" 1920 ...	424,000		

The mortality rate per 100,000 population was:

For 1913 ...	25.7
" 1922 ...	31.7
" 1923 ...	10.0
" 1924 ...	12.4
" 1925 (January to June) ...	4.4

The mortality during the famine was low—only 4.5 per cent. Leningrad was formerly one of the worst of the large cities of the world for typhoid fever owing to its poor filtration system. Its rate in 1910 was 33.7, while that of the largest cities in America was 23.5, and in thirty-three large European cities it was only 6.5. Since the advent of the Soviet Government the chlorinization system of some of the cities has been greatly improved, and the rate reduced in spite of the inefficient and worn-out sewage and filtration systems. For example, in Leningrad the rate decreased from 45.2 for the ten years preceding 1916 to approximately 20 since 1916, and for 1924 the rate was 14.6. The vaccination of two million people by the American Relief Administration and subsequent vaccinations by the Soviet Government may have helped.*

Cholera.

Cholera reached its maximum in 1921, when 205,000 cases were reported, and the actual number was many times this. There were 93,232 in 1922, 159 in 1923, only 10 in 1924, and 9 in the first six months of 1925 (Dobretzer). Beeuwkes says: "The recurrence of cholera has increased in the past years, the intervals have become shorter, and the virulence has augmented." Altogether there have been eight epidemics in Russia since 1823. That of 1908 was much smaller than the recent one, although there were 200,000 cases. The mortality in 1908 was 59 per cent., in 1911 and 1915, when there were only a few cases, 48 and 27 per cent. respectively, and for the first three and a half months of 1921, according to Dr. Beeuwkes, 50 per cent. (A.R.A. Reports.) Transportation formerly was from India and Persia, but it is not known how the present epidemic arrived. Professor Jakoleff says (personal communication) that the organisms probably lie dormant in healthy carriers between epidemics, as they have been found in man in the South of Russia, and also in fish of the Caspian Sea. During the epidemic which coincided with the famine of 1892 the number of people who died of cholera (Hiss and Zinsser) was 800,000.

It is difficult to form an opinion as to how far the present epidemic was influenced by the six million vaccinations done in two million people (by the American Relief Administration) in 1922-23 with the Pasteur "tetra-vaccine" against typhoid, paratyphoid (A and B), and cholera. It is interesting to know that in this large number of cases not a single death was reported from the use of the vaccine, although there were some extremely severe reactions.⁸ Castellani and Mendelson also had no untoward results in 170,000 Serbians who were similarly inoculated.⁹

Small-pox.

Small-pox has always been serious in Russia, as there was no compulsory vaccination before the revolution. Only in 1919 was there a marked increase in the disease. The official figures given below should be multiplied by two or more during the famine years.

1914 ...	94,000	1921 ...	83,000
1918 ...	57,000	1923 ...	40,000
1919 ...	166,000	1924 ...	28,553
1920 ...	98,000		

The rates (per 10,000 population) were: 4.1 for 1913, 3.6 for 1923, and 2.1 for 1924. Since 1918 the mortality has been 10 to 20 per cent. The Soviet Government has made vaccination compulsory (decree of 1919), and now

* In the city of Petrograd alone, in the three years 1918-20, there were registered in the hospitals 75,000 cases of typhus fever, and 25,000 cases of recurrent fever, or one-sixth to one-eighth of the population.

* In the above discussion paratyphoid has been included with typhoid as there were no accurate methods of distinguishing the two. Statistics for Russia are from Jakoleff, Dobretzer and Chernorouky, and "Statburo."

that it is manufacturing its own vaccines (in 1922 two million children were vaccinated by the A.R.A.) we may look forward to this disease being reduced to the limits of other civilized countries.

Dysentery.

With dysentery, as with typhoid and small-pox, there was no great increase during the famine and war years. The figures for the morbidity of this disease were:

1913 ...	445,955	1921 ...	197,000
1918 ...	59,000	1922 ...	365,691
1919 ...	137,000	1923 ...	239,231
1920 ...	324,000	1924 ...	338,567

The rates (per 10,000) were: 30.5 for 1913, 29.7 for 1922, 17.9 for 1923, 25.2 for 1924.* In spite of there having been no marked change in morbidity, the mortality increased sharply after 1918, which was attributed to the famine and the quality of the food. In 1919 the mortality was 20 per cent., and in 1920-21 it was 63 to 70 per cent. The prognosis of patients with typhus was especially poor (Chernoroussky). The usual type was the Flexner; the Shiga type was rarer, and the amoebic was found only in the South of Russia, where there were many cases of hepatic abscess. In the treatment of the bacillary form excellent results were obtained with Lister Institute serum; but the Pasteur serum was of little value. Even better results were obtained from the vaccine treatment than from serum.

Summary.

To sum up the situation in regard to infectious epidemics, we can say that the epidemics of typhus and relapsing fever which coincided with the famine were probably the largest ever seen in Russia, that the cholera epidemic was exceeded only by that of 1892, and that the malaria epidemic which followed the famine was decidedly the largest of its kind on record in Russia. Small-pox was slightly increased during the first year of the famine, but typhoid decreased. There was a small epidemic of even the plague during the famine. Since 1922 all of these infectious diseases have markedly decreased, except malaria and children's infections, which have increased. In 1924 there were 2,198 cases of epidemic encephalitis as against 958 in 1923.¹⁰

MALARIA.

Epidemics of malaria, syphilis, and tuberculosis have followed on the heels of the deadly typhus, and they remain problems of the present Russia.

Malaria had always been prevalent—for example, in 1914 there were reported 3,170,547 cases; but in 1922 the disease spread over the whole of Russia, even to Archangel and Murmansk on the shores of the Arctic, where it had hardly been known before, and indeed the tropical form was seen so far north. The peak of the epidemic was reached in 1923, when over six million cases were registered, and this probably represents only one-third of the actual number. Whole villages in the south and on the Volga were stricken. The average number of cases per 10,000 was 216 in 1913, 474 in 1923, 421 in 1924, and 175 in the first six months of 1925 (Dobreitser). For thirty-eight years preceding the war the cases in the Moscow district numbered 80.5 per 10,000; the rate was 258 in 1921, and 600 in 1923, according to official reports. In Vologda, between Leningrad and Archangel (latitude 60° N.), 72 per cent. of the workmen of the Water Traffic there suffered from malaria; in Archangel before the war there were 10 cases per 10,000, and in 1923 410 per 10,000. The tropical form was much more common in the south than in the north (Siberia 1.5 per cent., Middle Volga 25 per cent., Caucasus 50 per cent., and along the Caspian 80 per cent. in 1923). The mortality was extremely high where the tropical forms were present; "in the absence of quinine and other methods of treatment it is even said to amount to 40 per cent. in some places."¹¹

This unprecedented spread of malaria was probably

* Sir Humphry Rolleston points out that of the soldiers landing at Plymouth during the war, diagnosed as dysentery, 71 per cent. were either typhoid or paratyphoid; the same error may have existed in Russia, but it seems improbable that it has affected the figures as a whole. For if we consider those figures in connexion with those for typhoid, we see that there has been very little change in either series. (*Practitioner*, January, 1916.)

brought about by the constant movement of enormous masses of people and hordes of refugees during the war, revolution and famine, and the lack of quinine and medical personnel. Several Russian authors mention, as additional factors, the general lack of sanitation, the destruction of drainage systems, and the decrease of cattle and tillage of the soil. Previous epidemics occurred in 1894, 1899, 1903, and 1908, but on a smaller scale. Each epidemic has come in the years immediately following famine, but not during the famine.

Characteristics of the Present Epidemic.

Dr. I. A. Dobreitser, in the Pan-Russian Congress of January, 1924, pointed out the following interesting facts. Before the war the highest incidence was in spring, after the war in September; a high autumnal incidence indicates malaria for the ensuing year. *Anopheles* has been found in the past few years on the shores of the Arctic, and in the Caucasian Mountains, 6,500 feet above sea-level, and it lives during the winter in the houses of the peasants. Sixty per cent. of the cases have occurred between the ages of 18 and 60 years. A large number of infants have recently been seen with malaria (in Samara 30 per cent., and in some institutes of Moscow and of Turkestan 80 per cent. of the total number of infants observed). During 1924 and the first seven months of 1925 malaria had receded somewhat from its peak of 1923, but when I was along the Volga in the autumn of 1925 tropical malaria was again spreading rapidly. In Saratov Professor Kusheff of the Malarial Station told me that malaria had then mounted during three weeks to equal its former highest record (1923), and that 80 per cent. of the cases were tropical—an alarming situation.

Of 5,322 malarial patients examined in the Leningrad district in 1921 the spleen was markedly enlarged in 5.6 per cent. Where the disease is endemic the spleen is said to be enlarged in a greater percentage of children than of adults, but here the reverse was true, for only 1.6 per cent. of the children showed marked enlargement (A. P. Zellheim).

Treatment.

In the pernicious forms excellent results were obtained by large intravenous doses of quinine hydrochloride (1 to 2 grams) repeated for two or three doses on successive days. Even advanced cases yielded to this treatment (Dobrotin). The disease was nearly always fatal when treated by the mouth. After intravenous injection the spleen often returned to normal in one or two days. In 1922 Dr. A. N. Dobrotin in Saratov showed me such a case; in a girl aged 12 with the pernicious form the spleen reached to the umbilicus, but three days after the first intravenous dose it was reduced to normal. Professor N. E. Kusheff, however, limits the intravenous method to the comatose forms, as death may rarely occur from its employment. He uses the following as a hypodermic injection:

R. Quinine bichlor.	...	...	10 gm.
Methylene blue (Merck)	...	...	0.6 gm.
Aq. dest. q.s.	...	...	40 gm.
M. et sig.:	2 gm. hypodermically q.d. for twelve days; for following month 1.8 gm. per os.		

TUBERCULOSIS.

Tuberculosis was increased in all the combatant nations of Europe during and after the war. The peak of the curve was reached in England in 1918 (17.3 deaths per 10,000, compared with 13.6 in 1914); in Germany in 1918 (23.0, compared with 14.3 in 1914); in Austria in 1917 (43.2, compared with 25.9 in 1913); in Petrograd in 1920 (55.2, compared with 33.5 in 1913). The fact that such countries as Switzerland and Sweden have shown a more constant death rate for the past decade puts the blame more on the conditions of war than on the influenza pandemic.

The extreme conditions of life caused a dying off of all chronics. This removal of the most susceptible was naturally followed by a low death rate from tuberculosis in most of the countries where the death rate had been unusually high, notably in Germany and Russia. Thus in Leningrad, which we may take as an index for Russia, the rate has fallen gradually to 26.9 in 1924—lower than in

1913. The following figures for other years have been furnished through the courtesy of Professor S. A. Novosilsky of the "Statburo," Leningrad:

1881-85	54.8	1920	55.7
1903-13	36.9	1921	38.5
1917	36.8	1922	41.0
1918	38.6	1923	29.8
1919	48.0		

Current reports indicate that, although the death rate is lower, the disease is yet very prevalent. For example, in the universities where systematic examinations have been made, we get active tuberculosis in: Odessa, March, 1923, 6.9 per cent. of all university students; Kiev, November, 1923, 12 per cent. of all students; in 1924 another report, testified as to its accuracy by leading physicians there, gives 47 per cent. of the students.*

SYPHILIS.

Not only during the war, but for the years immediately following, syphilis increased all over the civilized world, in neutral as well as in combatant nations—for example, Sweden and Denmark.† In Germany in 1923, according to Möller, syphilis had increased 20 per cent., or 100 per cent. between the ages of 18 and 25 since 1919.

In Russia there was not only every social reason why syphilis should increase, but another important one absent in other countries—the lack of means of treatment: there were no arsenicals and few institutes. Overcrowding and filth contributed their share toward the increase. Under such conditions (the augmented chances of infection and the lack of treatment) syphilis mounted until in 1922 Dr. Semashko said that 80 per cent. of the population was infected in some sections (L. H. Guest). In 1923 doctors from north-western Russia reported to me that 95 per cent. of the population of their districts were syphilitic and the available supply of arsphenamine was far too small. In the same year the disease was so prevalent that I saw many who had been infected other than by sexual means—primary lesions in the nose, etc., whole families infected by ordinary contact under the extreme conditions of filth.

In 1920-22 there were officially registered in Leningrad institutes nearly 12 per cent. of the total population as having venereal disease, one-third of which (that is, 4 per cent. of the total population) were syphilitic. The actual number of cases must have been considerably greater. During these three years arsenicals were given to only 5 per cent. of the cases registered.

Present reports indicate that syphilis has decreased since 1923. In the autumn of 1925 Dr. Semashko, Commissar of Health, told me that although syphilis had greatly decreased throughout Russia there were yet some places where 80 per cent. of the people were infected. Where systematic examinations have been made the figures are very low. Dr. Semashko says:

"An examination of 70,000 Red soldiers gave 0.4 per cent. syphilis and 0.7 per cent. gonorrhoea in Moscow, and 0.9 per cent. syphilis and 2.0 per cent. gonorrhoea in Leningrad, at the moment of examination; of 1,600 university students of Moscow, 1.2 per cent. syphilis; of Moscow workers, 1.5 per cent. syphilis, 20 per cent. gonorrhoea; of some of the worst villages, 12 per cent. syphilis."

The examination of whole student bodies gave: in Odessa in March, 1923, 1.9 per cent. of the total as venereal; in Kiev in November, 1923, 12 per cent. of the total as venereal, one-tenth of which (1.2 per cent.) were syphilitic. The proportion of women to men was 1 to 6. In American universities 5 per cent. of the total are said to be syphilitic, and 20 per cent. of those that enlist in the regular army (M. J. Rosenau). At the Soviet sanatoriums in the Caucasian Mountains the chief of the department (Dr. Kishkin) told me that 1.1 per cent. of the 20,000 patients there in 1925 were found syphilitic. These low Russian figures can probably be explained by the difference in the methods of examination, such as the omission of the Wassermann test, etc.

It is interesting to note in connexion with the treatment of general paralysis by malarial infection that Russian

psychiatrists have reported that there has been no decrease in this disease, although malaria has increased several fold.

An analysis of several thousand cases of syphilis at the Nachinson Hospital, Leningrad (April to September, 1925), gives the following¹²: Most of the cases were between 20 and 30 years; 52 per cent. were married. Only a small number were from the educated classes—6 per cent. had an average education, and 0.3 per cent. a higher education. Twice as many women as men contracted the disease innocently. Many answered that they received the infection from sisters, brothers, daughters, or friends, but 87 per cent. of the men admitted infection from prostitutes; 24 per cent. contracted the ailment while drunk. Most of the men said that they began to go with prostitutes at the age of 16, and that they began to have sexual intercourse when 9 years old.

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Reviews.

CHRONIC RHEUMATIC DISEASES.

LONG famous for the treatment of arthritic affections, Bath has been fortunate in its medical authors, such as John Haygarth (nodosities), William Falconer, Caleb Hillier Parry, and J. K. Spender, to mention a few only of those who have enriched medical knowledge by the records of their experience. That the present medical generation of this ancient spa have not rested on their oars is shown by their recent contributions to our pages and to other publications, and now the last year's President of the British Medical Association, Dr. F. G. THOMSON, and his colleague Dr. R. G. GORDON in *Chronic Rheumatic Diseases: Their Diagnosis and Treatment*¹ have brought out a well written and thoroughly practical summary of a subject which has been so much discussed that it is sometimes rather difficult to see the wood for the trees. This compact and clearly expressed handbook is divided into three parts, dealing with the clinical aspects, the common mistakes in diagnosis, and the principles of treatment respectively. In a brief summary of the etiological factors, the authors, while giving full weight to infection, set before the reader the reasons for considering that diathesis and personal idiosyncrasies play a disposing part; they also consider that primary osteo-arthritis is entirely due to strain and malnutrition of the joint.

While not attempting a scientific classification, for which the time has hardly arrived, the authors present a series of clinical pictures, including fibrositis, lumbago, sciatica, periarticular fibrositis, focal arthritis, osteo-arthritis, spondylitis, climacteric arthritis, and gout. The much used, and somewhat abused because vaguely used, term "chronic rheumatoid arthritis" is dropped, and for much of what it has covered "focal arthritis" is substituted, and may be welcomed as a reminder that the responsible site of infection must be sought and removed. This point is rightly emphasized, as is the futility of wasting time on palliative treatment, such as drugs and local applications. After removal of the causal focus the most efficient form of medication is said to be the freshly made chlorine mixture, which the late Burney Yeo recommended in the treatment of typhoid fever, other reputed intestinal anti-

* From reports furnished by Mr. O. J. Frederiksen of the European Student Relief.

† Competent physicians in Sweden told me that they attributed this to increased movements of the population, increase of industrial life, etc., occasioned by the war.

¹ *Chronic Rheumatic Diseases: Their Diagnosis and Treatment*. By F. G. Thomson, M.A. Cantab., M.D., F.R.C.P. Lond., and R. G. Gordon, M.D., D.Sc., M.R.C.P. Edin. Oxford Medical Publications. London: Humphrey Milford, Oxford University Press. 1926. (Demy 8vo, pp. viii + 202. 8s. 6d. net.)