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Selected Abstracts

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ABBREVIATIONS USED IN "SELECTED ABSTRACTS" - Series II

Biul. eksp. biol.	Biulleten' eksperimental'noi biologii i meditsiny
Dokl. AN SSR	Doklady Akademii nauk SSSR
Kazan. med. zh.	Kazan'skii meditsinskii zhurnal
Klin. med.	Klinicheskai meditsina
Med. parazit.	Meditsinskaia parazitologiya i parizarnye bolezni
Med. zh. Uzbek.	Meditsinskii zhurnal Uzbekistana
Sov. med.	Sovetskaia meditsina
Sov. zdrav.	Sovetskoe zdravookhranenie
Vest. AMN	Vestnik Akademii meditsinskikh nauk SSSR
Voenno-med. zh.	Voenno-meditsinskii zhurnal
Vop. med. khim.	Voprosy meditsinskoi khimii
Vop. virus.	Voprosy virusologii
Zdrav. Kaz.	Zdravookhranenie Kazakhstana
Zdrav. Turkmen.	Zdravookhranenie Turkmenistana
Zh. mikrobiol.	Zhurnal mikrobiologii, epidemiologii i immunobiologii
Zh. nevropat.	Zhurnal nevropatologii i psikhiiatrii im. S. S. Korsakova
Zool. zh.	Zoologicheskii zhurnal

Institutions

AMS	Academy of Medical Sciences
AS	Academy of Sciences
ATP	Advanced Training of Physicians
IEM	Institute of Epidemiology and Microbiology
MH	Ministry of (Public) Health
MI	Medical Institute
SRI	Scientific Research Institute
USSR	Union of Soviet Socialist Republics

118. Kolendovich, A. I., On the epidemiology and prophylaxis of brucellosis in the TSelinograd Oblast. (Author's review.) Zh. mikrobiol. 40 (1963) 2: 106-107. (From the Sanitary-Epidemiological Station of the TSelinograd Oblast.)

As stated in this note, the decrease in the incidence of human brucellosis in the TSelinograd Oblast from 9.1 per 10,000 population in 1952 to 0.4 in 1961 was mainly due to mass inoculation of the population (134,344 vaccinations in 1961). However, the author concludes, a complete disappearance of the disease could result only from a thorough sanitation of the animal-breeding farms. Vaccination of the animals is not fully successful in this respect unless combined with the prompt killing of the diseased animals (mostly sheep).

119. List of articles on infectious diseases appearing during the second quarter of 1960 published in the Zh. mikrobiol. 40 (1963) 2:133-157.

A. Brucellosis

- a. Domrachev, V. M. and Sysoeva, M. V., "The clinique of brucellosis in the Crimea." In: Mikrobiologiya, infektsionnye i invazionnye bolezni (Microbiology, Infections and Invasive Diseases). Simferopol (1959), pp. 131-143.
- b. Sysoeva, M. V., "The problem of the laboratory diagnosis of brucellosis." Ibidem; pp. 145-152.
- c. Egorova, L. S., Peculiarities of the epidemiology of brucellosis in some raions of the Omsk Oblast. Thesis, Omsk (1960).
- d. Zamakhaeva, E. I. et al., "Study on the brucellosis infection of ticks in brucellosis foci of the goat-sheep type." In: Prirodnaia ochagovst' i epidemiologiya osobo opasnykh infektsionnykh zabolevani (Natural Foci and the Epidemiology of Especially Dangerous Infections Diseases). Saratov (1959), pp. 497-501.
- e. Lokhov, M. G., "Epidemiological efficacy of anti-brucellosis vaccination (according to experiences in the Saratov Oblast)." Ibidem; pp. 514-529.

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- f. Rementsova, M. M., "Supplementary sources of brucellosis infection." Ibidem; pp. 476-485.
- g. Taran, I. F. et al., "Study of the role of wild animals in the epizootology of brucellosis of the goat-sheep type." Ibidem; pp. 486-496.
- h. Ispolatovskaia, M. V. et al., Electrophoretic and immunochemical study of the protein components of the blood serum of guinea-pigs during the development of brucellosis infection. Biulleten' eksperimental'noi biologii i meditsiny 49 (1960) 3: 46-50.
- i. Kolendovich, A. I., To the study of the reactions produced by the brucellosis vaccine made from strain 19. Zdrav. Kaz. (1960) 4: 47-49.
- j. Koridze, O. A., Functional state of the liver in brucellosis. Tezisy dokladov I-i nauchnoi konferentsii terapevtov Gruzii (Topics of Papers of the 1st Scientific Conference of Georgian Therapists). Tbilisi (1960), pp. 92-93.
- k. Maruashvili, G. M. and Meshveliani, K. L., The problem of brucellosis diagnosis. Ibidem; pp. 89-90.
- l. Krivenkov, G. N., Cytomorphological, bacteriological and immunological characterization of the vaccinal process in irradiated guinea-pigs immunized with live brucellosis vaccine. Tezisy dokladov nauchnoi konferentsii po probleme "Vosstanovitel'nye i kompensatornye protsessy pri luchевой bolezni" (Topics of Papers of the Scientific Conference on the Problem "Reconstructive and Compensatory Processes in Radial Illness"). Leningrad (1960), pp. 35-36.
- m. Lavrina, A. V., Some changes of the function of the ovaries in brucellosis-affected women. Tezisy dokladov nauchno-prakticheskoi konferentsii vrachei-ginekologov, etc. (Topics of Papers of the Scientific Practical Conference of Physician-Gynecologists, etc.). Piatigorsk (1960), pp. 55-56.
- n. Levitov, A. M., Immunological changes in persons vaccinated against brucellosis. Sbornik nauchnykh trudov Kuibyshevskogo nauchno-issled. instituta epidemiologii, etc. (Collected Scientific Works of the Kuibyshev SRI of Epidemiology, etc.). 3 (1959) 148-156.

- o. Lipko, A. A., "X-ray diagnosis of skeletal affections in brucellosis." In: Voprosy klinicheskoi rentgenodiagnostiki (Problems of Clinical Roentgenodiagnosics). Moscow (1959), pp. 255-273.
- p. Lichtenstein, V. A. et al., Some problems of the clinique and diagnosis of neurobrucellosis. Tezisy i avtoreferaty dokladov nauchnoi konferentsii, posviashchennoi 40-letiiu so dnia ustanovleniia sovetskoi vlasti v Dagestane (Topics and Authors Abstracts of Papers of the Scientific Conference on the Occaion of the 40th Anniversary of the Establishment of Soviet Control in Dagestan). Makhachkala (1960), pp. 95-96.
- q. Mironova, T. I., The state of the vegetative nervous system in the locomotor form of brucellosis. Ibidem; pp. 110-111.
- r. Sheikh-Ali, D. I., Changes of the electrocardiogram in brucellosis patients under the influence of treatment with the radio-active mud of the Kaiakentsk Raion. Ibidem; pp. 168-169.
- s. Mailian, A. L., Treatment of brucellosis in children with antibiotics. Report I. Trudy Erevanskogo meditsinskogo instituta 10 (1959) :295-300.
- t. Mishnaevskii, M. N. and Semenova, E., Treatment of brucellosis with levomyecetin. Sbornik nauchnykh trudov Rostovskogo meditsinskogo instituta. Rostov-on-Don 11 (1959) :359-368.
- u. Mishchenko, V. V., On the treatment of brucellosis patients. Sbornik nauchnykh rabot Moldavskoi respubl. klinicheskoi bol'nitsy (Collected Scientific Works of the Moldavian Republic Clinical Hospital). Kishenev (1959) 2:217-220.
- v. Idem: On the side effects of antibiotics in the treatment of brucellosis. Ibidem; pp. 221-222.
- w. Mukhadze, M. G. et al., The diagnostic importance of Huddleson's brucellosis reaction in blood donors. Sbornik trudov nauchno-issled. instituta pere-livania krovi imen. G. M. Mykhadze (Collected Transactions of the G. M. Mykhadze SRI of Blood Transfusion). Tbilisi (1959) 6:375-377.

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- x. Tatishvili, N. I., Some results of a cytological study of the lymph nodes and spleen in experimental brucellosis of guinea-pigs. Ibidem; pp. 433-435.
- y. Nazirov, M. R., Problems of the pathogenesis, clinique and diagnosis of brucellosis. Tezisy dokladov 18-i vvezdnoi usovershenstvovaniia vrachei v gorode instituta usovershenstvovaniia vrachei v gorode Sal'ianakh (Topics of the 18th External Scientific Session of the Azerbaidzhan Institute for the Advanced Training of Physicians in the City of Sal'ianakh). Baku (1960), pp. 5-7.
- z. Radyshich, N. S., Pathologic morphology of experimental brucellosis infection in levomycetin-treated animals. Thesis, Odessa (1960).
- aa. Selivanova, E. I., Opsono-phagocytic reaction in brucellosis as an indicator of the immunobiologic reactivity of the body. Trudy Orenburskogo instituta 7 (1960) :379-384.
- ab. Uvarov, A. A., On the problem of the retarded growth of the brucellae of the first generation. Ibidem; pp. 392-400.
- ac. Steblov, E. M., Clinical picture, course, pathogenesis, diagnosis and therapy of neurobrucellosis. Sbornik rabot Ivanovskogo nauchnogo obshchestva nevropatologov i psykhiatrov (Collected Works of the Ivanovskii Scientific Society of Neuro-pathologists and Psychiatrists, 1959), pp. 49-78.
- ad. Talyzina, N. K., Antibiotics in the treatment of brucellosis in children. Voprosy okhrany materinstva i detstva 5 (1960) 2: 58-62.
- ae. Trifonova, S. F., Influence of brucellosis on the menstrual function. Ibidem; pp. 62-64.
- af. Taran, I. F., The role of the wild-animal fauna in the epidemiology and epizootology of brucellosis. Vest. AMN (1960) 3: 70-77.
- ag. Tiumeneva, Z. R., "Brucellosis in the TASSR." In: Infektsii s prirodnoi ochagovost'iu i zabolevaniia virusnoi etiologii (Infections with Natural Foci and Illness of Virus Etiology). Kazan (1959), pp. 90-95.

- ah. Umarova, Kh. S., Influence of the various clinical forms of brucellosis on the state of the female sexual sphere. Thesis, Tashkent (1960).
- ai. Khaikina, B. G., Immunological characterization of human brucellosis. Tezisy dokladov 15-i nauchnoi konferentsii, posviashchennoi 40-letiiu Smolenskogo meditsinskogo instituta (Topics of Papers of the 15th Scientific Conference Commemorating the 40th Anniversary of the Smolensk Medical Institute, 1960), pp. 33-34.
- aj. Eadem: Titrating allergic test for the analysis of the infectious and vaccinal process in the case of brucellosis. Tezisy dokladov 17-i nauchnoi sessii Orenburgskogo meditsinskogo instituta (Topics at the 17th Session of the Orenburg MI). Orenburg (1960), pp. 55-56.
- ak. Khodzhaev, Sh. Kh., Clinique of the relapses and the course of brucellosis in the immune organism. (Clinical and experimental study.) Thesis, Moscow (1960).
- al. Cherchenko, I. I., Use of fluorescent sera for the detection of brucellae. Tezisy dokladov nauchnoi konferentsii aspirantov i ordinatorov 1-go Moskovsk. med. instituta imen. I. M. Sechenova (Topics of the Scientific Conference of Aspirants and Interns of the I. M. Sechenov 1st Moscow MI, 1960), pp. 75-76.
- am. Shornikova, V. A., "Affections of the spinal chord in brucellosis." In: Nevropatologiya i psikiatriya (Neuropathology and Psychiatry). Cheliabinsk (1960), pp. 179-182.
- an. Shornikova, V. A. and Zmeeva, Z. A., "The problem of treating brucellar meningitis." Ibidem; pp. 183-187.

B. Cholera

- a. Korobkova, E. I., "World distribution of cholera during the period of the seventh pandemic." In: Prirodnaia ochagovost'..., pp. 530-544.
- b. Nikonov, A. G., "Pathogenesis and diagnosis of prolonged carriage of cholera vibrios by convalescents." Ibidem; pp. 567-572.

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- c. Pustovalova, L. M., Investigation of the nucleoproteid-poly-saccharide complex of cholera vibrios. Sbornik nauchnykh trudov Rostovskogo meditsinskogo instituta 12 (1960) :189-201.
- d. Saianov, R. M., On the nature of El Tor vibrios. Thesis, Rostov-on-Don (1959).

C. Smallpox

- a. Akatova, E. M., "Action of some physical and chemical factors and of antibiotics on the smallpox and vaccinia viruses." In: Voprosy bakteriologii, virusologii i immuniteta (Problems of Bacteriology, Virusology and Immunity). Moscow (1959), pp. 261-270.
- b. Drobinskii, I. P., Differential diagnosis of gamaside vesicular rickettsiosis from natural and chickenpox. Tezisy dokladov 18-i ocherednoi nauchnoi sessii Kishinevskogo med. instituta po itogam nauchno-issled. raboty za 1959 god. (Topics of the 18th Regular Session of the Kishinev MI on the Results of SR Work in 1959). Kishinev (1960), pp. 111-113.
- c. Zhurin, P. N., Contribution to the history of the liquidation of smallpox in the Chuvashskaia ASSR. Sbornik nauchnykh rabot Ministerstva zdravookhr. Chuvashskoi ASSR (Collected SR Works of the Ministry of Health of the Chuvash ASSR). Cheboksary, 2 (1960) :233-239.
- d. Nesmeianova, S. I., The hemagglutination inhibition reaction as a method for studying the post-vaccinal immunity. Thesis, Tashkent (1960).
- e. Tishko, O. G., "Materials to the methodology of studying the combination of parotitis and smallpox vaccines." (In Ukrainian.) In: 17-ia pidsumkova naukova konferentsiia aspirantiv ta klinichnikh ordinatov Kiivs'kogo medichnogo instituta. Tezi dopovidei (17th SR Conference of Aspirants and Clinical Interns of the Kiev MI. Topics). Kiev (1960), pp. 71-72.

D. Rickettsioses

- a. Gazizova, G. P. and Chechel'nitskaia, S. E., "On the epidemiology of Q-fever in the TASSR." In: Infektsii s prirodnoi ochagovost'iu... Kazan (1959), pp. 74-79.

- b. Sergeeva, P. A., "To the problem of the affection of the cattle in the TASSR with Q-fever." Ibidem; pp. 80-85.
- c. Davydov, M. V., Serological reactions in patients with virus influenza and Q-fever. Tezisy dokladov otchetnoi godichnoi nauchnoi konferentsii Leningradskogo sanitarno-gigien. meditsinskogo instituta (Topics of the Annual Reporting Scientific Conference of the Leningrad Sanitary-Hygiene MI). Leningrad (1960), pp. 32-33.
- d. Imanov, E. D. and Timofeev, A. F., Results of the serological examination of domestic animals for Q-fever in the northern oblasts of Kirgiziia. Izvestiia Akademii nauk Kirgizh. SSR. Seria biol. nauk 1 (1959) 2: 41-44.
- e. Karpov, S. P. et al., Q-fever in Western Siberia. Trudy Tomskogo nauchno-issled. instituta vaktsin i syvorotok (Transactions of the Tomsk SRI of Vaccine and Sera) 11 (1960) :91-96.
- f. Selezneva, A. A., Examination of the cattle in the Tomsk Oblast for Q-fever. Ibidem; pp. 97-98.
- g. Korinteli, O. M., Contribution to the problem of the clinique of Q-fever. Tezisy...i...konf. terapevtov Gruzii. Tbilisi (1960), pp. 99-100.
120. TSvetkova, E. M., Therapeutic efficacy of neomycin in experimental tularemia. Antibiotiki 8 (1963) 2:152-153. (From the Tularemia Laboratory of the Department of Diseases Occurring in Natural Foci of the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)
- Neomycin was found to exert a bacteriostatic action on the tularemia bacillus and to be efficacious in the treatment of tularemia-infected white mice when administered subcutaneously.
121. Khizhinskii, P. G., Activation, frequency and length of the active life of the tick Ixodes persulcatus in the forests of the Krasnoiarsk Krai. Med. parazit. 32 (1963) 1: 6-13. (From the Entomological Department of the E. I. Martsinovskii Institute of Medical Parasitology and Tropical Medicine, MH, USSR.)

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122. Babenko, L. V. and Rubina, M. A., Simplification of the method of forecasting the density of Ixodes ticks and some data on their biology. Med. parazit. 32 (1963) 1: 13-18. (From the Entomological Department of the E. I. Martsinovskii Institute of Medical Parasitology, etc.)

123. Nikitina, N. A. and Zhmaeva, Z. M., Factors determining the tick infestation rate on various host species. Med. parazit. 32 (1963) 1: 39-43. (From the Department of Diseases Occurring in Foci of the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

The three preceding articles can be quoted by title only.

124. Naumov, R. L. et al., On the participation of birds in the circulation of the tick-borne encephalitis virus. Med. parazit. 32 (1963) 1: 18-29. (From the E. I. Martsinovskii Institute of Medical Parasitology and Tropical Medicine, MH, USSR and the Poliomyelitis and Virus Encephalitis Institute, AMS, USSR, Moscow.)

The conclusions reached in this amply documented article were that

1. Antibodies against the virus of tick-borne encephalitis were found in 87 specimens of birds belonging to 46 species.

2. Presumably ixodes ticks are not the only means of conveying the infection to the birds.

3. Only birds permanently feeding on the ground play an essential part in the infection of the tick larvae and nymphs.

(The enumeration of the affected birds species by both their common Russian and their Latin names will be most useful for reviewers and translators of the Soviet medical literature in general.)

125. Rositskii (Rosicky) B., Comparative sketch of the horizontal and vertical structure of some natural foci of

tick-borne encephalitis in Central and South-Eastern Europe. Med. parazit. 32 (1963) 1: 29-35.
(From the Institute of Parasitology of the Czechoslovak AS, Prague.)

The details of this comparative ecological investigation must be studied in the original or a full translation. Of fundamental importance for the persistence of the natural foci were Ixodes ricinus and mostly small mammalian reservoirs of the infection.

126. Feoktistov, A. Z., Contribution of the problem of the circulation of the tick-borne encephalitis virus in nature. Med. parazit. 32 (1963) 1: 35-39.
(From the Khabarovsk Anti-Plague Station.)

Virus studies conducted during the winter of 1961-1962 in a mountainous region of the Khabarovsk Krai led to the isolation of 6 strains of the tick-borne encephalitis virus--3 times from the liver of "grey-red" voles and one time respectively from (a) the brain of a rodent of the same species; (b) the liver of a field mouse and (c) the brain of a field mouse.

As the author concluded

"The isolation of the causative organism of tularemia from the liver of rodents points to the presence of a viremia and speaks for a circulation of the virus also at the time of the hibernation anabiosis of the ixodes ticks."

127. Nel'zina, E. N. et al., Frequency and spatial distribution of the micro-populations of blood-sucking arthropods in the micro-biotypes of the small suslik (sisel). Med. parazit. 32 (1963) 1: 45-54. (From the SR Anti-Plague Institute in Rostov-on-Don and the Astrakhan Anti-Plague Station.)

The conclusions of the authors were that

1. During the period from March to June the frequency of the various species of blood-sucking arthropods in the suslik burrows of the Kharabalinsk Raion of Astrakhan

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Krai reached the following maximal figures: Neopsylla setosa--422; Ceratophyllus tesquorum--29; Ctenophthalmus pollex--24; Oropsylla ilovaiskii--41; Hirstionyssus criceti--187; Rhipicephalus schulzei--28; and Anoplura--100.

2. One could observe an alteration in the periods of parasitation by the various arthropod species. This non-coincidence of the parasitation rendered it possible for the suslik to feed several species of blood-sucking parasites without a perceptible detriment to its vitality.

3. The spatial distribution of the various arthropod species was different: the micro-populations of H. criceti were located partly in the burrow nests and partly on the host, the fleas and ticks also partly in the corridors of the burrows; the lice (anoplura) remained all on the body of the hosts.

128. Important articles quoted in a reference list published in Med. parazit. 32 (1963) 1:114-123.

- 1) Adamovich, V. L., Zoological and parasitological characterization of the natural tularemia focus in the Western Poles'e of the Ukrainian SSR. Zool. zh. 41 (1962) 9: 1297-1305.
- 2) Aliiev, A. A. and Amirkhanov, F. M., A new preparation against ixodes ticks. Materialy 3-go Zakavkavskogo s'ezda fiziologov, biokhimikov i farmakologov (Proceedings of the 3rd Transcaucasian Congress of Physiologists, Biochemists and Pharmacologists). Baku, 1962, pp. 30-31.
- 3) Bakhaeva, A. V., Tick fauna of Turkmenia. Izvestiia Akad. nauk Turkmensk. SSR, Ser. biol. nauk. Ashkhabad (1962) 5: 72-79.
- 4) Beliaev, N. S. et al., Efficacy and length of action of acaricides for ixodes ticks. Dokl. Irkutsk. protivochumn. inst. (1962) 3:171-172.
- 5) Riabov, N. I., Experience of dealing with the foci of tick-borne encephalitis in the Khabarovsk Krai with the aid of airplanes. Ibidem; 173-176.
- 6) Vasil'ev, K. G., Epidemiological study of live virus vaccines. Riga, 1961.

- 7) Gololobov, A. G., Materials to the study of the epizootological importance of the tick Ixodes persulcatus in Sakhalin. Trudy Dal'nevost. nauchno-issled. veterinarnogo inst. 4 (1962) :141-144.
- 8) Gurarii, R. M. and Zhigalkina, E. F., Clinical characterization of tick-borne encephalitis according to the materials of the 1961 epidemic in the Ivanovskii Raion of the Primorskii Krai. Tez. doklad. itognoi nauchnoi konf. Vladivostok. inst. epidemiologii, etc. (Abstracts of the Survey Conference of the Vladivostok Institute of Epidemiology, etc.), 1962, pp. 4-5.
- 9) Sotnikova, A. N. and Soldatov, G. M., Isolation of the tick encephalitis virus from the flea Ceratophyllus tamius. Ibidem; pp. 10-11.
- 10) Soldatov, G. M., Rodents and birds as feeders of ixodes ticks in the tick-borne encephalitis focus of the Primorskii Krai. Ibidem; pp. 11-12.
- 11) Sychevskii, P. T., Ixodes ticks of the rodents of the southern Primor'e. Ibidem; pp. 27-28.
- 12) Komardina, M. G. et al., Detection of plague-infected ticks on camels. Biull. Moskovsk. obshch. ispytaniia prirody. Otd. biol. 67 (1962) 4:157-158.
- 13) Poliakov, D. K., Anti-tick measures in the foci of tick-borne encephalitis. Trudy vyssh. nauchno-issled. inst. veterinarnoi sanitarii 20 (1962) :179-192.
- 14) Uzakov, U. IA., Tick fauna in the Shakhristiabzskii Raion of the Uzbek SSR. Ibidem 18 (1962) :62-65.
- 15) Idem: Contribution to the problem of typifying the biotypes of ixodes ticks and the tick-eradication measures in the Shakhristiabzskii Raion of the Uzbek SSR. Ibidem; 66-67.
- 16) Idem: Experience of the fight against ixodes ticks. Veterinariia (1962) 9: 68-70.
- 17) Pokrovskaya, E. I., Combined action of some poisons on the larvae of the tick Dermacentor marginatus and on rodents. Trudy Voronezhsk. med. inst. 45 (1962) :195-200.
- 18) Savitskii, B. P., On the attacks of the tick Ixodes ricinus in different stages of its development on man and goats. Sbornik nauchn. trudov Belorussk. inst. epidemiol. etc. Minsk 4 (1961) :30-31.

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- 19) Idem: Use of hexachlorane fumes for the fight against ixodes ticks and gnats in Belorussia. Ibidem; 90-98.
 - 20) Idem: Restoration of the population of the tick Ixodes ricinus on forest pastures treated with hexachlorane fumes. Ibidem; 99-101.
 - 21) Tatarinova, L. G., Characterization of the foci of tick-borne encephalitis in the Primorskii Krai. Tez. doklad. 4-i nauchno-prakt. konf. Kazakhsk. inst. epidemiol. etc. (Abstracts of the 4th Scientific-Practical Conference of the Kazakh Institute of Epidemiology, etc.). Alma-Ata, 1962, pp. 6-8.
 - 22) Eadem: Experimental foundations for a role of the ticks H. japonica douglasi and H. newmanni in the epidemiology of tick-borne encephalitis. Ibidem; pp. 8-10.
 - 23) Tatarinova, L. G. et al., Epidemiological and virusological characterization of the outbreak of tick-borne encephalitis in the Ivanovskii Raion of the Primorskii Krai in 1961. Ibidem; pp. 3-4.
 - 24) Tretiakova, M. E., Some problems of tick-borne (spring-summer) encephalitis in the Bashkir ASSR. Thesis. Ufa, 1962.
 - 25) Ushakova, G. B., Materials regarding the ixodes ticks of the Tselinograd Oblast. In: "The parasites of the wild animals of Kazakhstan." Trudy instituta zoologii Akad. nauk Kazakh. SSR 16 (1962) :177-182.
129. Taran, I. F. et al., Characterization of the immunity due to cutaneous vaccination and re-vaccination with the Br. abortus 104-M strain. Report I. The immunogenesis after cutaneous administration of the vaccine prepared with the strain Br. abortus 104-M in experiments on guinea-pigs. Zh. mikrobiol. 40 (1963) 3: 21-25.
(From the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR and the Anti-Plague Institute of the Caucasus and Transcaucasus.)

Summarizing the results of their observations, the authors stated that

1. The minimal dose of the vaccine prepared from the strain Br. abortus 104-M for cutaneous inoculation of guinea-pigs is 1 million organisms.

2. The intensity of the immunological reactions and the frequency with which cultures of the vaccinal strain can be isolated from the internal organs of the cutaneously inoculated animals depends upon the dose of the vaccine. The overwhelming majority of the animals became free from the vaccinal organisms within 3 months, but some of the test guinea-pigs harbored the organisms up to 6-9 months.

3. Histological examinations of the vaccinated guinea-pigs showed the presence of a stormy cellular reaction in the lymph nodes and organs which became maximal at the end of the first month after vaccination. The cellular reaction remained manifest for up to 6 months after vaccination and terminated with an active hyperplasia of the lymphoid elements. In a few instances guinea-pigs vaccinated cutaneously with 1-5 billion doses showed necrotic granulomata in some of their lymph nodes.

130. Pilipenko, V. G. and Miroshnichenko, M. A., On the compatibility of the STI anthrax vaccine with the combined vaccine against plague, tularemia and brucellosis. Zh. mikrobiol. 40 (1963) 3: 26-31.
(From the SR Anti-Plague Institute of the Caucasus and Transcaucasus.)

The authors found that the STI anthrax vaccine, if administered cutaneously to guinea-pigs at the same time as the combined plague-tularemia-brucellosis vaccine, or with any two components of this tri-vaccine, lost to a marked degree its immunogenicity. On the other hand, the STI vaccine exerted no untoward influence on the efficacy of the tri-vaccine.

131. Aleksandrov, N. I., Gefen, N. E. et al., Study of the reactions produced in small groups of people by the chemically prepared anti-anthrax depot vaccine. Zh. mikrobiol. 40 (1963) 3: 32-34.

Testing the anti-anthrax vaccine prepared by them (see Abstract No. 97) on small groups of human subjects, the authors arrived at the following conclusions:

1. The chemically prepared anti-anthrax depot vaccine, if administered subcutaneously in two doses of 2.5 and 5 mg or 5 and 5 mg proved to be innocuous and to

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cause moderate reactions. The local and general reactions in the vaccinated persons could be classified as slight and did not at all interfere with their working capacity.

2. The changes in the blood picture observed in the vaccinated during the 10-day periods following the first and the second vaccination indicated a definite and sufficiently marked immunizatory stimulation of the lymphatic system.

3. The clearly positive results of allergic tests with "anthraxin" (anthrax allergen) in 11 out of the 12 test persons indicated the presence of a specific immunizatory process.

4. Since the vaccine under test appears thus suitable for human vaccination, further studies of its large-scale administration are desirable.

132. Koturga, L. N., Comparative characterization of the pathomorphological changes caused by the experimental cutaneous or subcutaneous administration of the vaccinal brucella strains 19, 19-BA and M-104. Zh. mikrobiol. 40 (1963) 3: 39-45.
(From the Central-Asian Anti-Plague Institute.)

Summarizing the results of his well documented and illustrated findings, the author stated that

1. The vaccinal brucella strains 19 and 19-BA produced in guinea-pigs a characteristic vaccinal hyperplasia of the reticulo-histiocytary system with formation of solitary granulomata in the lymph nodes, liver, and spleen without signs of necrobiosis or necrosis as well as moderate dystrophic changes in the liver and kidneys.

2. The brucella strain M-104 caused a marked irritation of the reticulo-endothelium, and a more frequent formation of massive granulomata in remote as well as in the regional lymph nodes as well as in the liver, spleen and lungs. In the liver one could note a necrosis of the granuloma cells, fatty dystrophy and focal necroses of the liver cells.

3. The findings made are suggestive of a greater residual virulence of the strain M-104.

133. Maiboroda, G. M. and Dashkevich, I. O., Purification of fluorescent conjugates from free fluorochrome with the aid of ionites. Report I. Purification of anti-microbial fluorescent antibodies with the aid of the anionite AB-17. Zh. mikrobiol. 40 (1963) 3: 55-59. (From the Order of Lenin S. M. Kirov Military-Medical Academy.)

These investigations, partly made with Q-fever and brucellosis conjugates, can be mentioned by title only.

134. Leshkovich, L. I., On the relation of the patho-morphological manifestations of the vaccinal process with the immunogenicity of live plague vaccines. Zh. mikrobiol. 40 (1963) 3: 86-90. (From the Central-Asian SR Anti-Plague Institute.)

This amply documented article ought to be studied in detail by those interested in the problems of plague immunology. The conclusions of the authors, which alone can be quoted here, were that

1. Live vaccines, if tested on animals in admittedly large doses, produce patho-morphological changes of the reticulo-endothelial system, which are not of specific immunological importance, but represent a reaction to the antigens and ballast proteins.

2. The varying frequency with which epitheloid granulomata appear in the liver and spleen of vaccinated guinea-pigs depends upon the antigenic and invasive properties of the various live plague vaccines, their dosage and the physiological state of the test animals. The granulomata are not morphological manifestations of the state of immunity of a given individual, inasmuch as immunity may be present in the absence of such patho-morphological changes. According to the appearance of granulomata in the test animals, one may to some extent evaluate the immunological efficacy of the various plague vaccines.

3. Indications of the innocuousness of live vaccines are the degree of distribution of the proliferative changes produced by them, the reversibility of these changes, and the absence of necrotic manifestations in an overwhelming majority of the test animals. Inasmuch as these manifestations increase with an increase of the dosage, one must evaluate the innocuousness of plague vaccines with doses not markedly exceeding those which produce an effective immunity.

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4. There exist no absolutely innocuous vaccines, but the degree of harmfulness of live plague vaccines can be limited through their administration in rational immunizing doses. The possibility of this is demonstrated by the presence of an immunity against plague after vaccination with small doses.

135. Anisimova, T. I. et al., The mechanisms of the natural immunity of Rhombomys opimus Licht. against plague. Zh. mikrobiol. 40 (1963) 3: 96-100.
(From the Central Asian SR Anti-Plague Institute, MH, USSR.)

Summarizing the results of their observations, the authors stated that

"it was possible to demonstrate the superior value of a study of live preparations with the aid of luminescent microscopy over that of the usual examination of fixed and stained preparations. The large gerbils are highly, but not uniformly susceptible to plague: side by side with highly sensitive animals which succumb to plague, one finds resistant ones which recover and survive. According to the character of their phagocytic reaction the big gerbils may be divided into two groups. In the highly sensitive animals the phagocytic reaction is inhibited and has an incomplete character. In the resistant individuals one notes a stormy activity of the phagocytes leading to a destruction of the plague bacilli. As a result of the recovery from plague there develops in such animals a post-infectious immunity."

136. Smirnova, O. V., Use of the photonephelometer for recording the serological changes in the serum of plague-vaccinated and irradiated animals. Author's abstract. Zh. mikrobiol. 40 (1963) 3: 117-118.

The author used the plasma of plague-vaccinated (and partly also irradiated) guinea-pigs and rabbits to determine and plot differences in the optical density of these fluids before and after addition of a specific antigen obtained through autolysis of the EV strain.

Nephelometric tests conducted in this manner with the plasma of immunized guinea-pigs began to become weakly positive 3 days after the administration of 1.5 billion doses of live EV vaccine and proved markedly positive two weeks after immunization. In the case of the rabbits positive results were obtainable only after prolonged hyperimmunization with a total dose of 15-20 billion organisms of the EV strain.

Irradiation of the rabbits one month after the last vaccination did not inhibit the positive reactions with the EV antigen.

137. Semenov, M. IA., Role of the agricultural activity of man in the liquidation of a natural tularemia focus in the Rostov Oblast. Annotation. Zh. mikrobiol. 40 (1963) 3: 129.
(From the Sanitary-Epidemiological Station of the Rostov Oblast.)

Though the great reduction of the planting of alfalfa led to a marked decrease of the population density of Mesocricetus raddei, tularemia enzootics continue to exist in the Rostov Oblast and may periodically lead to epizootics.

138. Fetisova, I. A., Observations on the epidemiology of anthrax in the Kzyl-Ordynsk Oblast. Annotation. Zh. mikrobiol. 40 (1963) 3: 131.
(From the Aral Sea Anti-Plague Station.)

The author reports on two small outbreaks of anthrax due to the preparation of horse meat for consumption. One of the five patients died, while administration of penicillin and anti-anthrax serum saved the life of the others.

139. Martyniuk, IU. V. and Emdina, I. A., Q-fever in the western oblasts of the Ukrainian SSR. Annotation. Zh. mikrobiol. 40 (1963) 3: 131.
(From the L'vov Institute of Epidemiology, etc.)

Observations in man as well as findings in cattle and sheep showed that "Q-fever is of definite importance in the local pathology of the western Ukrainian oblasts."

140. Vershilova, P. A. (Editor): Brutsellez: Rukovodstvo dlia vrachei (Brucellosis, Manual for Physicians). Moscow, 1961. Reviewed in Zh. mikrobiol. 40 (1963) 3:138-140 by S. M. Smirnov.

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The last chapter of this work, dealing with the prophylaxis of brucellosis, is rather adversely criticized.

141. Important articles quoted in a reference list published in Zh. mikrobiol. 40 (1963) 3:143-152.

A. Anthrax

- 1) Vaisburd, I. A., An attack of the cutaneous form of anthrax after the accidental subcutaneous introduction of Tsenkovskii's second vaccine. Zdravookhr. Tadzhikistana (1960) 1: 40-42.
- 2) Krasil'nikov, A. P. and Izraitel', N. A., Some problems of the pathogenesis and therapy of experimental anthrax infection developing in the presence of acute radiation sickness. Tezisy doklad. 2-i nauchn. sessii Grodnensk med. inst. (Abstracts of the 2nd Scientific Session of the Grodno MI), 1960, pp. 59-60.
- 3) Kuz'min, V. V. and Belikov, N. P., Bacteriological examination of raw hides giving a positive precipitin reaction for anthrax. Sborn. rabot Leningradsk. veterin. inst. (1959) :11-14.

B. Tularemia

- 1) Report of the commission for the experimental confirmation of the possibility of a prolonged carriage of tularemia bacilli by water-rats. In: Prirodnaia ochagovost' i epidem. osobo opasnykh infekts. zaboiev. (Natural Foci and the Epidemiology of Especially Infections Diseases). Saratov, 1949, pp. 580-589.
- 2) Goncharova, M. I. and Tikhvinskaia, M. V., Role of the water-rat in the tularemia foci of the Tatar Republic. In: Infektsii s prirodnoi ochagovost'iu i zaboiev. virusnoi etiologii (Infections with Natural Foci and Diseases of Virus Etiology). Kazan, 1959, pp. 86-89.
- 3) Zarudin, V. V. and Shevelev, A. S., Contribution to the problem of the peculiarities of the morphology of vaccinal tularemia infection in the presence of acute radiation sickness. Biulletin eksper. biol. i medits. 49 (1960) 3:113-117.

- 4) Igolkin, N. I., Zoological and parasitological observations of the "arvicolar" (water-rat) type of tularemia focus in the floodland of the Ob' River. Trudy Tomsk. nauchno-issled. inst. vaktsin i syvorotok 11 (1960) :72-80.
- 5) Kleitman, E. I., Some data on the influence of betatron rays on the natural immunity of white rats against tularemia. Ibidem; 319-324.
- 6) Shevelev, A. S., Experimental observations on the interaction of vaccinal tularemia infection and acute radiation sickness. Tezisy doklad. 15-i nauchn. konf. posviashch. 40-letiiu Smolensk. med. inst. (Abstracts of the 15th SC Commemorating the 40th Anniversary of the Smolensk MI), 1960, p. 158.
- 7) Shevelev, A. S. and Zarudin, V. V., Immunological and morphological parallelisms in the vaccinal tularemia infection of guinea-pigs under the conditions of radiation sickness. Trudy Smolensk. med. inst. 11 (1959) :197-209.
- 8) Shevchenko, S. F., Role of ixodes ticks in the natural tularemia foci of the Don River lowlands. Thesis. Leningrad, 1960.

C. Plague

- 1) Dava Norov, The tarabagan trade in the Mongolian People's Republic and its epidemiological importance. Izvest. Irkutsk. nauchno-issled. protivochumn. inst. Sibiri i Dal'nego Vostoka 22 (1959) :244-254.
- 2) Domaradskii, I. V., The study of plague in the Mongolian People's Republic. (In place of a foreword.) Ibidem; 7-9.
- 3) Zhovtyi, I. F. and Emel'ianova, N. D., Plague vectors in the Mongolian People's Republic. Ibidem; 72-107.
- 4) Nekipelov, N. V., Rodents--the plague carriers in the Mongolian People's Republic. Ibidem; 17-71.
- 5) Idem: Epizootology of plague in the Mongolian People's Republic. Ibidem; 108-243.
- 6) Pastukhov, B. N., Measures for the prevention of and the fight against plague in the Mongolian People's Republic. Ibidem; 255-269.

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- 7) Timofeeva, L. A., Characterization of the plague cultures isolated in the Mongolian focus. Ibidem; 10-16.

D. Encephalitis

- 1) Boiko, V. A., Wild and domestic animals--feeders of the stages of metamorphosis of the tick Ixodes persulcatus in the foci of tick-borne encephalitis in Tatar. In: Infektsii s prirodnoi ochagovost'iu... pp. 40-48.
- 2) Gil'manova, G. Kh., Characterization of the tick-borne encephalitis strains isolated in the Tatar ASSR. Ibidem; pp. 33-39.
- 3) Gil'manova, G. Kh. and Gubaidullin, IU. Sh., To the problem of isolation of the tick-borne encephalitis virus in the natural foci of the Tatar ASSR from the milk of goats. Ibidem; pp. 53-57.
- 4) Gil'manova, G. Kh. et al., To the problem of the study of the latent natural foci of tick-borne encephalitis in the raions of the Tatar ASSR. Ibidem; pp. 24-28.
- 5) Idem: To the study of the natural foci of tick-borne encephalitis in the southern raions of the Tatar ASSR. Ibidem; 18-23.
- 6) Idem: Epidemiological peculiarities of the outbreak of tick-borne encephalitis in the Tumutuksk Raion of the Tatar ASSR. Ibidem; pp. 29-32.
- 7) Smetania, M. A., Efficacy of the measures in the fight against ixodes ticks in the Aktashsk focus of the Tatar ASSR. Ibidem; pp. 58-63.
- 8) Chueva, S. V., Morbidity of tick-borne encephalitis in the Tatar ASSR from 1949 to 1958. Ibidem; pp. 13-17.
- 9) Vlasenko, N. M. et al., Contribution to the problem of the development of tick-borne encephalitis foci of the urban type due to the activities of man in the landscapes of the West-Siberian lowlands. In: Voprosy teoreticheskoi i klinicheskoi meditsiny (Questions of Theoretical and Chemical Medicine). Novosibirsk, 1959, vol. 1, pp. 40-43.
- 10) Idem: Premises to the epidemiology and prophylaxis of tick-borne encephalitis in the forest massives of the urban raions of Novosibirsk. Ibidem; pp. 34-39.

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- 11) Karpov, S. P. and IAv'ia, A. R., Epidemiology and prophylaxis of tick-borne encephalitis in the Tomsk focus during the season of 1957. Trudy Tomsk. nauchno-issled. inst. vaktsin i syvorotok 11 (1960) :46-51.
- 12) Karpov, S. P. et al., Tick-borne encephalitis foci in West Siberia and problems of their sanitation. Ibidem; 7-13.
- 13) Liubushkina, V. M., Experiences in the fight against tick-borne encephalitis in the Altai mountains. Ibidem; 62-65.
- 14) Ovehinnikova, L. D. et al., Experience in the production of an embryonal vaccine against spring-summer tick-borne encephalitis. Ibidem; 250-254.
- 15) Popov, V. M. et al., Carriers of the tick-borne encephalitis virus in the Tomsk focus of the infection. Ibidem; 33-37.
- 16) Rodiukova, E. N., Materials to the production of anti-encephalitis serum. Ibidem; 232-237.
- 17) Trukhmanov, B. G. and Rodiukova, E. N., Use of encephalitis vaccine as antigen in the production of anti-encephalitis serum. Ibidem; 238-242.
- 18) Trukhmanov, B. G. et al., On the reactions caused by the preparations against tick-borne encephalitis. Ibidem; 255-261.
- 19) Tiushniakova, M. K. et al., Specific properties of the brain diagnosticum of tick-borne encephalitis precipitated with methyl alcohol. Ibidem; 66-71.
- 20) Khlopkov, A. M. et al., Changes in the organs of horses producing serum against tick-borne encephalitis. Ibidem; 311-318.
- 21) IAv'ia, A. R. et al., Materials to the characterization of the Gur'ov focus of tick-borne encephalitis. Ibidem; 52-61.
- 22) Kliuchikov, V. N., Two-wave virus meningo-encephalitis--a new clinical variant of tick-borne encephalitis. Sbornik trudov 1-i nauchno-medits. konf. IAroslavskoi oblastnoi klinich. bol'nitsy (Collected Works of the 1st Scientific Medical Conference of the IAroslavskii Oblast Clinical Hospital).

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- 23) Kraevskii, I. A. M., On disturbances of the vascular regulation in infectious di-encephalitis. Tezisy doklad. soveshch. po voprosu narusheniia regul. krovo-obrashcheniia pri patologii nervnoi systemy (Abstracts of the Meeting on the Disturbance of Blood Circulation in the Pathology of the Nervous System). Moscow-Leningrad, 1960, pp. 32-34.
- 24) Markarian, A. R., On the clinical peculiarities of the contemporaneous epidemic encephalitis A. Tezisy i autoref. doklad. nauchnoi konf. posviashch. 40-letiiu so dnia ustan. sov. vlasti v Dagestane (Abstracts of the SC Commemorating the 40th Anniversary of Soviet Rule in Dagestan). Makhachkala, 1960, pp. 105-106.
- 25) Popova, L. B., Characterization of the strains of the tick-borne encephalitis virus isolated in the Kuibyshev Oblast. Sborn. nauchn. trudov Kuibyshevsk. nauchno-issled. inst. epidem. etc. 3 (1959) :157-165.
- 26) Sokolov, N. N., Experimental investigation of the virus of Japanese encephalitis. Thesis. Khabarovsk, 1960.
- 27) Steblov, E. M., Differences of the tick-borne encephalitis met with in various localities of the USSR. Sborn. rabot Ivanovsk. nauchn. obshch. nevropatologov i psykhiatrov (Collected Works of the Ivanovskii Scientific Society of Neuropathologists and Psychiatrists), 1959, pp. 79-90.
- 28) Shevtsov, V. M., Combination of otogenous purulent meningitis with tick-borne encephalitis. Zh. ushnykh, nosovykh i gorlovykh boleznei (1960) 3: 67-68.
- 29) Shilova, S. A., On the biological foundations of the epidemiological prognoses of tick-borne encephalitis. Biull. Moskovsk. obshch. ispytat. prirody. Otd. biolog. 65 (1960) 1: 37-47.
- 30) Shubin, N. V., Tick-borne encephalitis in Western Siberia. Thesis. Tomsk, 1960.
- 31) Belman, Kh. L., Kleshchevoi entsefalit (Tick-borne encephalitis). Leningrad, 1960.

E. Alia

- 1) Drobinskii, I. R., Differential diagnosis of gamasid-borne vesicular rickettsiosis from smallpox and chickenpox.

Tezisy doklad. 18-i ocherednoi nauchnoi sessii Kishinevsk. medits. inst. po itogam nauchno-issled. raboty za 1959 god (Abstracts of the 18th Regular Scientific Session of the Kishinev MI on the Results of SR Work in 1959), 1960, pp. 111-113.

142. Vlodavets, V. V., Determination of the viability of bacteria in aerosols. Zh. mikrobiol. 40 (1963) 4: 46-49. (From the Sysin Institute of General and Communal Hygiene, AMS, USSR.)

The conclusion reached in this article, the technical details of which must be studied in the original or in a translation, is that the number of viable cells in an aerosol may be ascertained with the aid of a simple method, based upon the determination of the proportion of single cells and microcolonies.

143. Sinel'nikova, E. P., Fluid foam filters for the entrapment of bacterial aerosols. Zh. mikrobiol. 40 (1963) 4: 49-53. (From the Kiev Institute for ATP.)

As described in this illustrated article, a foam produced from a fluid consisting of 30% glycerol in meat-peptone broth proved most efficacious for the absorption of bacterial aerosols.

144. Pisarevskii, IU. S., Anatomico-physiological peculiarities of the respiratory system of man and animals in the genesis of immunity after vaccination by aerosol. Report I. Role of the structure of the respiratory passages in the mechanical retention of the inhaled material. Zh. mikrobiol. 40 (1963) 4: 57-61.

The conclusions reached in this article, the details of which do not lead themselves to the purposes of a brief review, were that

1. The efficacy of vaccination by aerosol depends, besides upon the specific properties of the vaccines used, also upon the anatomical and physiological peculiarities of the respiratory system of man and animals.

2. A considerable barrier for the penetration of large aerosol particles is created by the nasal cavity and the nasopharynx.

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3. The nasal cavity and the nasopharynx of small laboratory animals (mice, white rats, guinea-pigs) differ morphologically from the anatomical structure of the upper part of the respiratory passages in man and monkeys.

4. The retention and accumulation of the fine aerosol particles is regulated by differences in the aerodynamic conditions.

145. Ginsburg, N. N. and Maslova, T. N., The capacity for phagocytosis of the cellular elements of macrophage culture in vitro. Report II. Zh. mikrobiol. 40 (1963) 4: 62-66. (From the Tarasevich State Control Institute of Biological Products.)

This illustrated article, in which studies made with the vaccinal anthrax strain STI-1 are described, can be quoted by title only.

146. Aleksandrov, N. I., Gefen, N. E. et al., Search for effective chemical vaccines against some zoonoses. Report III. Production of a chemical plague vaccine and investigation of it in experimental animals. Zh. mikrobiol. 40 (1963) 4: 66-71.

As stated in the introductory part of this article, observations made mainly in the United States have pointed to the important role in the immunogenesis of plague of the Fraction I and also of the "residual" antigen (Baker et al., 1952).

"Still," the authors continued, "a sufficiently intense immunity, apt to ensure a resistance of the animals against aerosol infection with P. pestis, can be produced only by repeated administration of these antigens. It is thus possible to postulate that one could overcome this handicap through adaptation of a depot vaccine (adjuvant)."

In their present publication the authors reported on a study of the protection afforded by the different plague antigens with the aim of obtaining an efficacious chemical plague vaccine. They worked with the strain EV/NIEG*

* NIEG is an abbreviation of "Nauchno-issledovatel'skii institut epidemiologii i gigieni" = Scientific Research Institute of Epidemiology and Hygiene.

(standard strain 303) cultivated in the casein-hydrolysate medium of Higuchi and Carlin (1957), in which the organisms were grown under aeration of 37°C for 40-42 hours. To maintain the pH, 4 ml of a 25% xylose solution were added every 8-12 hours per 100 ml of the culture fluid. At the end of cultivation the bacterial mass, the concentration of which had reached $18-25 \cdot 10^9$ per ml, was separated off by centrifugation and twice washed with bi-distilled water.

The bacterial mass, containing $10 \cdot 10^9$ organisms per ml, was exposed for 30 minutes to the action of ultrasound and the resulting lysate was used for the production of the antigens by various methods. Preparation No. 1 was obtained by precipitation with alumo-potassium alum, No. 6 by treating the lysate with hydrochloric acid, No. 9 with the aid of acetone. Preparation No. 13 was obtained in the same manner as No. 1 after preliminary treatment with aluminium hydroxide to free the lysate from toxic components.*

Toxic doses of the various preparations for laboratory mice were as follows:

No. 1--0.1 mg

No. 9--0.75 mg

No. 6--0.03 mg

No. 13--0.15 mg

Immunization tests in white mice challenged with doses of the vaccinal strain lethal for 100% of the controls gave the following results:

<u>Prepar-</u> <u>ate No.</u>	<u>Vaccine Dose</u> <u>(in mg N)</u>	<u>Number of</u> <u>Vaccinations</u>	<u>Challenge</u> <u>Dose (DCI)</u>	<u>Results of Challenge</u>		<u>% Sur-</u> <u>vival</u>
				<u>Died</u>	<u>Survived</u>	
1	0.12	3	2	3	8	72.7
"	0.06	3	2	5	7	58.3
"	0.03	3	2	13	4	23.3
"	0.12	6	2	3	10	77.9
"	0.06	6	2	6	9	60.0
"	0.03	6	2	9	6	40.0

(Table continued on page 127)

* For technical details of the preparation of these antigens reference must be made to the original or to a translation.

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<u>Prepar-</u> <u>ate No.</u>	<u>Vaccine Dose</u> <u>(in mg N)</u>	<u>Number of</u> <u>Vaccinations</u>	<u>Challenge</u> <u>Dose (DCI)</u>	<u>Results of Challenge</u>		<u>% Sur-</u> <u>vival</u>
				<u>Died</u>	<u>Survived</u>	
6	0.12	6	2	5	7	58.3
"	0.06	6	2	7	7	50.0
"	0.03	6	2	9	5	35.7
9	0.012	3	2	19	11	36.7
"	0.05	3	2	18	12	40.0
13	0.1	1	2	19	11	36.7
"	0.05	2	2	2	13	86.6
Controls	-	-	-	25	0	0

As this table shows, twice repeated vaccination with the preparation 13 gave the best results, but the preparete 1 and to a lesser degree No. 6 gave also satisfactory results.

The authors thus reported on a further series of tests in which challenge doses of 100 DCL of a virulent plague strain were used:

"In tests on mice the following was found: the preparation No. 1, if given once in doses of 0.1, 0.05 or 0.025 mg protected respectively 50, 60 and 66% of the animals; owing to its high toxicity for mice the preparation No. 6 could not be evaluated in this series; preparation No. 9 protected under the same conditions 75, 60 and 0% of the animals; if single doses of 0.1, 0.05 and 0.25 mg of preparation 13 were given, 100, 85 and 80% of the animals survived; three times repeated immunization with the same doses resulted in a survival of 100%."

"Results in guinea-pigs were as follows: out of the animals once immunized with the preparation No. 1 in doses of 0.5, 0.125 and 0.067 mg survived after challenge with 100 DCL 50, 33 and 0%; three times repeated administration resulted in a survival of 66, 66 and 0%; under the same conditions the preparates 6 and 9 did not protect guinea-pigs."

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As shown in the following, better results were obtained in these animals with the prepare No. 13:

<u>Dose (in mg N)</u>	<u>Number of Vacci- nations</u>	<u>Days Between Vaccinations</u>	<u>Survived Challenge*</u>		<u>Died</u>	<u>Mean Time (in days) of Death After Challenge</u>
			<u>Number</u>	<u>Percent</u>		
1	1	-	3	60.0	2	16.5
0.5	1	-	4	80.0	1	9
0.25	1	-	4	80.0	1	15
0.5	3	7	3	60.0	2	10
0.125	3	7	4	80.0	1	11
0.067	3	7	3	60.0	2	10
Controls			0	-	10	7.3

* Challenge tests with 100 DCL were made 4 weeks after immunization.

Aleksandrov and his associates emphasized that the preparation No. 13 thus proved efficacious for the immunization of guinea-pigs as well as of white mice; it was little toxic for the latter. They postulated that this preparation might prove suitable for the manufacture of a non-toxic and efficacious chemical plague vaccine.

147. Kurdina, D. S., A comparative study of the residual virulence of vaccinal brucella strains of various types.
Report II.* Zh. mikrobiol. 40 (1963) 4: 97-102.

Summarizing the results of her investigations, Kurdina stated that

1. Studies on the residual virulence of the vaccinal strains Br. abortus, melitensis and suis by three methods (infection of guinea-pigs with various doses of the cultures under test followed by bacteriological and immunological studies; biological titration** and production of a septicemia

* The first communication of the author appeared in 1961 under the title "A study of the vaccinal strain of Brucella melitensis." (See Abstract No. 598.)

** I.e., bacteriological studies on guinea-pigs to which mixtures of two vaccinal brucella strains had been administered in various doses.

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through administration of the vaccinal strains to animals, the protective functions of which had been blocked through large cortisone doses) gave identical results. Hence any of these three methods can be used for the determination of the residual virulence of vaccinal brucella strains.

2. All strains were in the S form and were clearly different from the virulent cultures on account of their lowered virulence and invasive power. The residual virulence of vaccinal strains of one and the same type (Br. abortus) is apt to be unequal. Among the presently studied strains the strain Br. abortus 104-M had the highest residual virulence, Br. abortus 112 the lowest, while the strain Br. abortus 19-BA had an intermediate position. The residual virulence of the strain Br. suis 61 stood near to that of Br. abortus 104-M.

3. As shown by investigations on guinea-pigs and white mice, the residual virulence of the strain Br. melitensis Rev I also approached that of the 104-M strain.

148. Kalabukhov, N. I. et al., Influence of the vitamins C and E on the physiological peculiarities and the plague susceptibility of midday gerbils. Zh. mikrobiol. 40 (1963) 4:102-106.
(From the Experimental Base of the "Mikrob" Institute and the Astrakhan Anti-Plague Station, MI, USSR.)

The conclusions reached by the authors were that

1. Feeding of highly plague-susceptible midday gerbils with materials containing vitamin C (ascorbic acid) and vitamin E (tocopherol) increased the sensitivity of the animals to infection with P. pestis, as shown by earlier and more numerous deaths among the test animals.

2. Immunization of white mice with the avirulent EV strain or infection of the midday gerbils with sublethal doses of a virulent plague strain led in the animals having the two above mentioned vitamins in their food to an accelerated development of immunity.

Commenting upon these results in the concluding paragraph of their text, the authors stated that

"our findings speak for a probable influence of the interaction of vitamins C and E, which

the rodents obtain in their natural food, on the speed of the development and disappearance of plague epizootics occurring among them during different seasons and in different years.... Our findings also permit to question whether it would be useful to make combined use of these vitamins in connection with the vaccination against plague so as to speed up the development of the immunity."

149. Ustin-Petrova, T. F., The epidemiology of tularemia in the natural foci of the Krasnodar Krai.
Zh. mikrobiol. 40 (1963) 4:117-122.
(From the Sanitary-Epidemiological Station of the Krasnodar Krai.)

The conclusions reached by the author through a detailed consideration of the information available in regard to these tularemia-affected raions were as follows:

1. Two territorially separated tularemia foci of the plains-steppe type and one focus of the foothill-brook type were found to exist in the Krasnodar Krai.
2. Tularemia attacks in the krai show a seasonal incidence, occurring in the foci of the first mentioned type from November to March (domestic mice and field mice forming the reservoir of the infection) and from March to June (when hamsters are involved), in the foothill-brook focus, where water-rats are involved, from May to August.
3. Characteristic for the foci of the first category are outbreaks related to agricultural and other occupational activities and such of a domestic nature. The outbreaks in the foothill-brook focus are water-borne.
4. In years favorable for the multiplication of mice and voles and if no modern agricultural techniques are used, there exists a potential danger of local or widespread epizootics followed by manifestations of tularemia in the not vaccinated part of the human population.
5. For the prevention of tularemia in the krai it is indispensable (a) to watch constantly over the frequency of the rodents and ixodes ticks; (b) to start anti-rodent and anti-tick campaigns in good time; and (c) to make systematic use of anti-tularemia vaccinations (to which latter the marked decrease in the incidence of the

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disease since 1953 was mainly due). These measures must be implemented not only within the foci but also in the potentially endangered surrounding areas.

150. Uglovoi, C. P., The biological activity of tularin stored for different lengths of time in the performance of skin tests. Zh. mikrobiol. 40 (1963) 4:128-131. (From the Gamalcia Institute of Epidemiology and Microbiology, AMS, USSR.)

Tests in guinea-pigs as well as a limited number of observations in persons who had suffered from tularemia or had been vaccinated against it, showed that tularin prepared from vaccinal strains (Gaiskii No. 15 or Gaiskii No. 15 reconstituted) is apt to remain potent for at least 4-5 years (as actually observed for 5 years and 7 months).

In order to avoid stormy reactions, the bacterial standard of the tularin preparations used for skin tests should not exceed 2 billion organisms per ml.

151. Ershov, F. I. and Bykova, Z. A., Biological characterization of plague bacteriophages. Zh. mikrobiol. 40 (1963) 4:131-136. (From the 2nd Moscow Pirogov State MI and SR Anti-Plague Institute of the Caucasus and Transcaucasus.)

As stated in an earlier publication (see Abstract No. 678 of these reviews), the authors had found that all six phage strains examined by them showed an identical morphology of their negative colonies and a similarity of their antigenic structure. The present studies again showed that all these strains fell in a common group. However, the authors maintained that they were able to observe some differences in the length of interaction between the various phages and a standard plague culture as well as in the rapidity with which the phage strains were inactivated by various physical and chemical agents (ultraviolet irradiation, heating to 55°C, action of urea, photodynamic action of methylen blue and sensitivity to the action of 0.5% sodium citrate). The authors recommend the further use of the above mentioned tests in view of the possibility of thus arriving at a differentiation of the plague phage strains.

152. Karpov, S. P., The present state of the problem of tick-borne encephalitis. Sov. med. 26 (1963) 4: 41-46.
(From the Tomsk MI and the Tomsk SR for Vaccines and Sera.)

The main statements made in this well documented survey may thus be summarized:

1. As the author claims, it is accepted at present that "the virus of spring-summer tick-borne encephalitis is apparent in the form of some biological variants with an identical antigenic structure, which produce various forms of disease in man: the more severe paralytic form; the slight two-wave form of meningo-encephalitis; two known hemorrhagic fevers (the non-fatal Omsk hemorrhagic fever and the more severe and highly fatal Kyasanur Forest disease in India); and affections in sheep (louping ill) in Scotland and northern England."

Natural foci of the disease are met with in many parts of the Soviet Union and in a number of other countries. Since attacks of it are occasionally observed in autumn, the designation "spring-summer" is apparently no longer justified; and with increasing frequency one speaks now simply of tick-borne encephalitis.

2. Within recent years further information on the properties of the virus has become available, for the details of which the original must be consulted.

3. The known antibiotics do not act on the virus, but, as detailed by the author, ultra-sonic waves do exert an action on it, especially if acting in combination with formol or ethyl alcohol.

4. Under the conditions of cold storage the virus may survive for 2 weeks in milk and it may survive for not less than 2 months in cream and butter.

5. The virus is capable of causing agglutination of the erythrocytes of a number of animal and bird species and because of this property ample use is made of the hemagglutination and hemagglutination inhibition reactions for the laboratory diagnosis of the disease.

6. As specified in the original, great progress has been recently made in growing the virus in tissue cultures.

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7. Vilcek (Acta virologica 5 [1961] 5: 278) has shown that the infected cells of the tissue cultures produce a protein substance called interferon, which exerts an inhibitory action not only on the tick-encephalitis virus but also on unrelated viruses. Further work with this substance, now available in purified and concentrated form, is of great theoretical and potentially practical importance.

8. Pogodina (Vop. virusol. [1960] 3: 272) was to produce a clinically typical disease in white mice through infection of various parts of the alimentary tract. The virus was found apt to multiply there, especially in the intestine. It has been established also that the tick-borne encephalitis virus persists in the blood of experimentally affected goats for 3 days and in their milk for eight days (Drozdov, 155 Thesis).

9. Experimental infection of monkeys (M. rhesus) offers a possibility of differentiating the different encephalitis viruses.

10. As discussed in the original, the susceptibility of various wild animal and bird species to tick-borne encephalitis has been studied. Bats have been inculcated in this manner, and the common voles and house mice were found highly susceptible.

11. Strains with a lowered virulence have been isolated from patients with an inapparent form of tick-borne encephalitis and from ticks and may also be produced experimentally.

12. Toxic properties of the tick-borne encephalitis virus have been observed under special conditions.

13. The antigenic properties of the virus have been studied with the aid of neutralization, complement fixation and hemagglutination inhibition tests and the latter have been used for a classification of the viruses.

14. The clinique of tick-borne encephalitis has been discussed in various publications, including monographs by Panov (Leningrad, 1956) and Shapovalov (Leningrad, 1961). Details of the findings made, especially of the laboratory methods recommended (which now include the use of allergens) must be studied in the original.

15. The availability of fairly simple methods of laboratory diagnosis and an increasing familiarity of the physicians with the clinical features of tick-borne encephalitis

serum purified by the diaferm 3 method of the USSR Academy of Medical Sciences. With the help of this therapy the mortality of the disease can be reduced to a minimum (0.6% according to a 1957 thesis).

16. Ample epidemiological studies showed among other findings the particularly important role of Ixodes persulcatus in the eastern raions of the Soviet Union and of Ixodes ricinus in its western part.

Increase attention is being paid to the role of birds in the spread (including the long-distance spread) of tick-borne encephalitis. In connection with these studies evidence has been obtained indicating a role of the ectoparasites (gamasid ticks and fleas) of wild animals and birds.

17. While formerly only ixodes ticks seemed responsible for a conveyance of tick-borne encephalitis to man, during recent years evidence has been found for a role played in this respect by the consumption of raw goat-milk, leading to alimentary infections.

18. The problem of the prophylaxis of tick-borne encephalitis (including a study of ways and means to eradicate the foci of this infection) has been the subject of ample research. The efficacy of DDT preparations, distributed on the ground or from airplanes, has been established.

Systematic treatment of the domestic animals with 10% DDT dust was found efficacious, but now chlorofos is recommended for this purpose. However, the remarkable success obtained in the Tomsk Oblast by Karpov and his associates (1962) with 10% DDT dust deserves great attention.

19. Continued efforts are being made to devise a method of specific prophylaxis against tick-borne encephalitis. The author draws in this respect special attention to the vaccines prepared from virus cultures by Levkovich and Zasukhina (Acta virologica 3 [1959] 2: 73) and some other workers.

20. Promising results have been obtained by administering the above mentioned serum preparations (see paragraph 15) prophylactically to tick-bitten individuals.

A long reference list enhances the value of the survey.

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153. Diachenko, S. S., The role of microbiological diagnosis in the liquidation of infectious diseases. Vrach. delo (1963) 4:107-113.
(From the Microbiological Laboratory of the Kiev SRI of Epidemiology and Microbiology.)

This survey, which deals with the subject stated in the title in a general manner, can be mentioned only by title.

154. Gubina, E. A. and Dunaeva, T. N., The infectious process in mixed tularemia-brucellosis infection. Zh. mikrobiol. 40 (1963) 5: 3-8.
(From the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

The conclusions reached in this well documented article were:

1. Simultaneous infection of guinea-pigs with brucellosis and tularemia caused a process identical with that produced in animals separately infected with these two diseases.

2. In guinea-pigs infected with tularemia 15-30 days after brucellosis infection, one could observe a delayed development of the former (tularemia) infection.

3. After simultaneous infection of rabbits with brucellosis and tularemia one observed a delay in the spread of the brucellae in the body of the test animals, a reduced invasion of the organs by the organisms, and a reduced accumulation of brucellosis antibodies.

4. These changes in the course of mixed infection were caused by the development of corresponding immunological reactions in the test animals.

155. Rykova, V. I. and Domaradskii, I. V., Lipolytic activity of some microorganisms. Zh. mikrobiol. 40 (1963) 5: 14-17. (From the Irkutsk State SRI Anti-Plague for Siberia and the Far East.)

Work with the avirulent plague strains EV and 17, two virulent pseudotuberculosis strains, the STI anthrax strain, one Brucella suis strain, one Br. melitensis strain,

the Br. abortus strains 544 and BA, four Br. rangifers (reindeer) strains, five virulent and one avirulent (No. 15) strains of tularemia bacilli led to the following conclusions:

1. The presence of lipase was observed in the vaccinal anthrax strain, the virulent and avirulent tularemia strains and in all types of the brucellae. The highest lipase activity was noted in the case of the tularemia bacillus which evidently easily discharged this enzyme into the surrounding medium. Lipase was absent from the vaccinal plague strains and the virulent pseudotuberculosis strains.

2. An optimal lipase activity of the tularemia and anthrax bacilli was observed at a pH ranging from 6.5-7.0. The rate of tributyrin splitting in phosphate and cytric-phosphate buffer solutions was two times higher than that in acetate-veronal or borate buffers. With a rise of temperature from 40°C to an optimal temperature (e.g. 24°-37° in the case of the anthrax bacillus) the rapidity of the reaction was accelerated almost threefold.

3. The lipase activity continued after lyophilization of the organisms.

156. Avanian, L. A. et al., The influence of iron on the virulence and immunogenicity of avirulent plague strains. Zh. mikrobiol. 40 (1963) 5: 17-23.
(From the SR Anti-Plague Institute of the Caucasus and Transcaucasus MH, USSR, Stavropol'.)

As stated in the introduction to this article, previous observations* had shown that (a) if grown on meat-peptone media with an increased iron content, the EV strain intensively utilizes this element and at the same time the catalase activity of the organism becomes increased and (b) the administration of iron protosulfide to guinea-pigs leads to an increase of the virulence of weakly avirulent plague strains passed through such animals. The object of the present study was to assess the influence of iron on the vaccinal plague strains EV and No. 1 in white mice. The authors found that

* See Avanian and Gubina, Trudy Armiansk. protivochumnoi stantsii (Transactions of the Armenian Anti-Plague Station) Erevan (1960), Installment 1: 149 and Zh. mikrobiol. (1961) 3: 92. (Abstract No. 466.)

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1. Passage of the avirulent plague strains EV and No. 1 through white mice led to an enormous increase of the residual virulence of the strains.

2. White mice proved more sensitive in such tests than guinea-pigs.

3. If passed through white mice simultaneously with the administration of iron to the animals, the two plague strains became more immunogenic for guinea-pigs than the original cultures of these strains.

(The well documented detailed findings of the authors must be studied in the original or a full translation.)

157. IAfaev, R. Kh., The differentiation of plague and pseudotuberculosis bacilli. Zh. mikrobiol. 40 (1963) 5: 23-26. (From the Order of Lenin S. M. Kirov Military-Medical Academy.)

Discussing the various methods available for a differentiation of plague and pseudotuberculosis bacilli, the author stated that the fluorescent antibody technique is tedious and hardly or not at all applicable under field conditions. It was, therefore, important to establish whether the use of carbon-saturated immune sera would be suitable for such tests. The commercially produced plague sera proved unsuitable for this purpose because they gave positive reactions with pseudotuberculosis as well as with plague bacilli. The author produced therefore as serum of his own by immunizing rabbits intravenously with two-days-old broth cultures of the EV strain grown at 28°C. The animals were given at first at five-day intervals five injections of 0.1, 0.2, 0.4, 0.8 and 1.6 ml respectively; after 1-1/2 to 2 months they got three further injections of 0.4, 0.8 and 1.6 ml, respectively, at the same intervals (5 days). They were bled two weeks after the last injection. The method of carbon saturation is not stated.

As shown in a table, only plague bacilli grown at 37°C (and therefore possessing a sufficient amount of Fraction I) were well agglutinated by the carbon-containing serum in slide agglutination tests. Sera raised in rabbits with the Fraction I gave identical but weaker reactions. Anti-pseudotuberculosis sera adsorbed to carbon reacted neither with plague nor with pseudotuberculosis bacilli.

The diagnostic reactions were carried out thus:

"One drop of the carbon-saturated serum was put on a slide and two drops of a suspension of the organisms (under test) in normal saline, containing 500 cells per ml, were added; the fluid was mixed and spread out on half of the slide in the form of a triangle; tests with immune and normal carbon-saturated sera were made on the same slide. The reaction was read after the slide had been gently shaken a few times. In positive cases the carbon particles agglomerated and the fluid became clear."

Tests with 26 virulent and 6 avirulent plague strains and with 50 pseudotuberculosis strains gave the following results:

<u>Incubation</u> <u>Temperature</u>	<u>Plague Cultures</u>		<u>Pseudoth. Cultures</u>	
	<u>Positive</u>	<u>Negative</u>	<u>Positive</u>	<u>Negative</u>
37°C	29	3 ^a	3 ^b	47
28°C	--	32	-	50

Remarks - (a) One old avirulent culture and two strains isolated respectively in 1956 and 1958.
 (b) Isolated from rats in Leningrad - one strain in 1913, two in 1956, interestingly all three in one and the same locality.

It is curious that carbon-saturated commercial cholera 0 sera gave a markedly positive result with 29 of the plague strains and 3 of the pseudotuberculosis strains which latter all contained Fraction I.

Two of the atypically reacting plague strains and the three atypical pseudotuberculosis strains showed the following properties:

(See table on page 139)

Thus, the author pointed out, these cultures could be classified neither as plague nor as pseudotuberculosis strains. The presence of Fraction I in supposed pseudotuberculosis strains was particularly noteworthy. Possibly these strains, which had proved avirulent from the moment of their isolation, occupied an intermediate position between P. pestis and P. pseudotuberculosis.

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<u>Supposed Species & Number of Strain</u>	<u>Reaction to</u>		<u>Urease Activity</u>	<u>Colony Type</u>	<u>R e a c t i o n t o</u>		
	<u>Rhamnose</u>	<u>Glycerol</u>			<u>Plague Phage</u>	<u>Pseudotb. Phage</u>	<u>Carbon-Satu- rated Plague Serum</u>
<u>P. pseudotb.</u>							
489	-	-	-	R & S	+++	+++	+
1021	-	-	-	R	+++	+++	+
1022	-	+	-	R	Not tested		+
	(after 3 days)						
<u>P. pestis</u>							
1223	+	-	-	R	+++	+++	-ve
	(7 days)						
1253	+	-	-	R	+++	+++	-ve
	(3 days)						

N. B. All the strains were avirulent for white mice and produced in broth a sedimentative growth with a slight clouding of the fluid in the case of strain 489.

158. Povalishina, T. P. and IAnkovskii, A. K., Geographical distribution of hemorrhagic fever with a renal syndrome. Zh. mikrobiol. 40 (1963) 5: 27-31.
(From the Institute for Poliomyelitis Studies, AMS, USSR and the Military Hospital of the Moscow Okrug.)

This brief but amply documented enumeration of the localities affected by hemorrhagic fever in the Soviet Union and elsewhere can be quoted by title only.

159. Martinevskii, I. L. et al., On the fate of plague bacteriophages in the body of healthy and plague-affected big gerbils and the possible routes of the transmission of the phages under experimental conditions. Zh. mikrobiol. 40 (1963) 5: 31-34.
(From the Central-Asian SR Anti-Plague Institute, MI, USSR.)

The conclusions reached by the authors were that

2 Plague bacteriophages, if administered subcutaneously, persist in the body of healthy big gerbils (Rhombomys opimus) up to 7 days and in plague-infected animals of this species up to 19 days.

2. In order to detect the phages under field conditions, an examination of the spleen and the lymph nodes is indispensable. In the blood the phages may persist up to three days.

3. The plague bacteriophage exerts a lytic action in the body of the gerbils, but this is not so marked as on artificial media.

4. If "shadow colonies" are detected in growths from field material, it is indispensable to transfer these colonies to agar plates containing anti-phage serum.

5. For a direct observation of the phages it is necessary to keep the growth in the incubator for a prolonged time (in a number of instances up to a month).

6. A transmission of plague phages through contact of the gerbils or through fleas has thus far not been observed.

160. Pilipenko, V. G. et al., An experimental study on the cutaneously administered combined tri-vaccine prepared with the plague strains EV, 1 and 17, the brucellosis strain 104-M, and Gaiskii's tularemia strain 15 (reconstituted) and on the selection of optimal antigen doses in this vaccine. Zh. mikrobiol. 40 (1963) 5: 35-40. (From the SR Anti-Plague Institute of the Caucasus and Transcaucasus, Stavropol'.)

Previous investigations by Pilipenko and his associates had shown that the administration of the triple vaccine referred to in the title did not produce as long-lasting an immunity in guinea-pigs as inoculations with the corresponding mono-vaccines. The authors made therefore two further series of tests, in which the vaccine dose of two drops or 1 ml contained (a) 3 billion plague bacilli, 2 billion brucellae, and 50 million tularemia bacilli or (b) increased doses of brucellae (4 billion) and of tularemia bacilli (250 million). They pointed out that with the method of standardization by turbidity used the actual number of tularemia bacilli present in the vaccine dose was not 250 million but 1-1.2 billion, i. e., 5-6 times the dose of 160-200 million organisms used for the vaccination of man with the usual dry tularemia mono-vaccine.

Experiments with the reinforced triple vaccines, the detailed results of which must be studied in the original or a translation, led to the following conclusions:

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1. The cutaneously administered combined vaccine, containing in the vaccinal dose (2 drops dispensed from an eye-dropper) 3 billion plague bacilli of the EV strain or the strains 1 and 17, 2-4 billion organisms of the brucellosis strain 104-M and 250 million of tularemia bacilli, was proved to cause slight reactions and was throughout the observation period (up to 6 months) not less immunogenic than the corresponding mono-vaccines.

2. If using these quantities of antigens in the vaccinal dose, one observed no more the instability of the immunogenic properties met with when the formerly tested antigen doses were embodied into the live combined triple vaccine.

3. When preparing this triple vaccine from the corresponding dry vaccine, suspensions and mixtures of the latter must be made in such a manner that in the vaccinal dose of the combined vaccine 3-5 times more tularemia bacilli are present than is prescribed for the tularemia mono-vaccine. The number of plague bacilli and of brucellae needs no change. This increased dose of tularemia bacilli must be used also when manufacturing a dry triple vaccine.

161. Kraft, V. A., On the influence of hydro-climatic factors on the development of tularemia epizootics and epidemics in the TSelinograd Oblast. Zh. mikrobiol. 40 (1963) 5: 41-48. (From the Sanitary-Epidemiological Station of the TSelinograd Oblast.)

The conclusions reached by the author were that

1. Sixty-three tularemia foci were detected in the TSelinograd Oblast (Kazakh SSR), of which 43 were of the floodland-river type and 20 of the lake-floodland type.* The reservoir of the infection was the water-rat while mosquitoes of the genus Aedes and D. marginatus ticks served as vectors.

2. The appearance of tularemia in these foci were closely related to the hydrological condition of the lakes and rivers in the oblast: the rise and fall of the water levels led to a migration of the water-rats. This migration

* As added in the text, from 1946 to 1961 tularemia epidemics were recorded in 39 of the 63 foci.

exerted an influence on the appearance of epizootics by leading on the one hand to an increased contact between these animals and on the other hand to increased chances of their coming in touch with immature phases of the vector ticks.

3. Epidemic manifestations of a vector-borne character occurred simultaneously in the foci of both types every 3-5 years when the atmospheric precipitations were considerable and the water-level was high.

4. It is necessary to intensify anti-tularemia work in years with much precipitation and increased numbers of water-rats.

The presence of tularemia in the Khabarovsk Krai was first confirmed in 1958 by Shapiro and his associates (Zh. mikrobiol. [1958] 2: 21) through the observation of two patients suffering from this disease in Khabarovsk. In the opinion of these authors the infection had been imported with contaminated grain. The validity of this surmise was doubted by Olsuf'ev* who postulated the existence of natural tularemia foci in the Far East. This contention was confirmed by the present authors who were able to isolated tularemia cultures from Ixodes persulcatus and from Haemaphysalis concinna in two widely distant localities of the Khabarovsk Krai. They were also able to show that nymphs of Ixodes persulcatus, developed from tularemia-infected larvae, were capable of transmitting the disease to white mice on which they had been fed.

162. Brikman, D. I., The epidemiology of tularemia and the methods of fighting this disease in the Iakutsk ASSR.
Zh. mikrobiol. 40 (1963) 5: 60-64.
(From the Irkutsk SR Anti-Plague Institute.)

The author summarized that

1. Tularemia was first recorded in Iakutia in 1944 and reappeared since then perennially with particularly severe epidemics in 1959 (459 cases) and 1960 (1,107 cases--total cases from 1944 to 1961--2,261).

* See the book Laboratornaia diagnostika osobo opasnykh i maloizvestnykh bakterial'nykh infektsii (Laboratory Diagnosis of Especially Dangerous and Little Known Bacterial Infections), Rostov/Don (1959): 182.

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2. The endemic tularemia focus is situated in the central part of Iakutia along the course of the Lena and its major tributaries (where water-rats abound).

3. The human outbreaks in the republic are mainly vector-borne (mosquitoes and gnats).

4. Human infections take place mainly in summer and autumn on islands in the Lena River on the occasion of the hay harvests, fishing and collection of berries. Adult males are mainly affected.

5. Since ixodes ticks are absent from Central Iakutia, further investigations are necessary to study the mechanism of the infection.

6. Systematic vaccination is the principal means of fighting tularemia. With its aid the incidence of the disease was reduced from 1,107 attacks in 1960 to 111 in 1961.

163. Levi, M. I. et al., Serological investigations in plague. Report VIII. The sensitivity and specificity of the antibody neutralization reaction in plague and tularemia.* Zh. mikrobiol. 40 (1963) 5: 65-68. (From the SR Anti-Plague Institute, Rostov/Don.)

The conclusions to this article state that

1. The specificity of the antibody neutralization reaction for plague was tested with the aid of 212 strains of different microorganisms, but only the plague strains and 3 pseudotuberculosis strains with radically atypical properties neutralized the antibodies to the Fraction I in anti-plague sera. Out of the 32 plague strains one did not synthesize Fraction I and in connection with this showed no neutralizing

* The first of these reports, with the sub-title "Observation of the antibodies in the sera of experimentally infected animals with the aid of passive hemagglutination tests" was dealt with in these reviews (see Abstract No. 548); the second, "A study on the specificity of the passive hemagglutination test in plague," appeared in Laboratornoe delo 7 (1961) 9: 44-46; Nos. 3, 4 and 7, in the Sbornik rabot Elistinskoi protivochumnoi stantsii (Collected Works of the Elista Anti-Plague Station, 1961) Installment 2; Nos. 5 and 6 in press.

activity. The antibodies to the complete antigen in anti-tularemia serum became neutralized only in the presence of tularemia bacilli. The strains of other microorganisms did not show this property.

2. The sensitivity of the antibody neutralization reaction in plague and tularemia exceeds that of all other serological methods which needed for observation specific antigen or liver organisms. If one considers also the comparative expediency of the method, the adequacy of a large-scale use of the antibody neutralization reaction for diagnostic purposes becomes evident.

3. This reaction permits an easy distinction between plague and pseudotuberculosis bacilli.

With regard to the last point of the conclusions the following statement is made in the text:

"...we prepared water-salt extracts of plague and pseudotuberculosis bacilli which had been grown at 37°C on agar for 3 days and had been killed with acetone. To prepare the extracts we added to 10 mg of the powdered dry bacilli 1 ml of normal saline and 1 drop of tuluol. After agitation in a shaking apparatus for 24 hours and centrifugation we tested the neutralizing activity of the extracts. Such were prepared from the bacterial mass of 13 plague strains and 34 pseudotuberculosis strains. Among the former the extract of the strain 1253 (which did not synthesize Fraction I) had no neutralizing activity whereas the extract of the strain EB-4, which synthesized a small quantity of Fraction I, was active in dilutions of 1:20,000 to 1:40,000; the extracts of the other (plague) strains showed a neutralizing activity if diluted hundred of thousands or millions of times."

Out of the 34 pseudotuberculosis strains, 31 showed no neutralizing activity, while three did so at low titers. However, live suspensions of these strains with a standard of 2.5 billion organisms showed no neutralizing activity.

164. Smirnov, V. P., From the diary of a physician who survived experimental plague infection. Zh. mikrobiol. 40 (1963) 5: 68-72. (From the Irkutsk SR Anti-Plague Institute for Siberia and the Far East.)

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In order to compare the efficacy of immunization with the live EV vaccine by the subcutaneous, cutaneous or conjunctival routes or by the combined subcutaneous and conjunctival administration of the vaccine, experiments were made on 1,240 guinea-pigs, which after the immunization were challenged intratracheally with a virulent plague strain (Smirnov, Tezisy dokladov nauchnoi konferentsii po prirodnoi ochagovosti i epidemiologii osobo opasnykh infektsionnykh zabolevanii [Abstracts of Papers at the Scientific Conference of the Natural Foci and Epidemiology of Especially Dangerous Infectious Diseases], Saratov [1957], pp. 364). Since these tests proved the high efficacy of the combined method, the author decided to experiment on himself. For this purpose he was vaccinated by the combined method on 10th of March 1950, receiving a dose of 1.5 billion plague bacilli each subcutaneously and through the conjunctiva. For his subsequent challenge he used material from the spleen of a guinea-pig which had succumbed to infection with a strain isolated from a victim to pneumonic plague in 1948 and had been kept highly virulent through animal passages. On March 25 he rubbed this material into a scarified part of the skin on his left leg. The virulence of the material was proved once more through guinea-pig experiments made at the same time.

Dealing with his subsequent plague affection in a summary manner, the author stated:

"After infection the author was kept in isolation for 17 days. He was under regular observation, including the taking of the temperature twice daily, bacteriological examinations of the blood, sputum, urine and the secretions from the site of infection. After 5 days the crust at the site of infection, under which a plague ulcer had developed, was removed. On the 7th day the temperature rose to 38.5°C and kept at a high level for 36 hours. On the 8th day it came to the formation of a regional femoral bubo with a characteristic painfulness. From the secretions of the plague ulcer material for growth on agar plates was taken several times on each day during the two weeks following its appearance; 6 times material was also taken for the infection of guinea-pigs. On the 6th, 7th, 8th and 9th day 7 plague strains were grown and an additional strain was obtained from one of the guinea-pigs which had succumbed to the infection. For 13 days daily cultures were made on

agar plates from the blood, sputum and urine, which all gave a negative result. When tested biochemically, the 8 plague strains were found to be identical with the original culture. All the strains remained virulent."

"Thus," the article concluded, "a person vaccinated against plague by the combined method (through the conjunctiva and subcutaneously) and then infected with a virulent plague strain through the scarified skin, even though not specifically treated, had a slight attack of cutaneous-bubonic plague."

The large-scale use of the combined method of plague vaccination was therefore recommended by the author.

165. Praidkina, M. D. et al., The biological and chemical properties of the GKI* pest-allergen. Report I. Zh. mikrobiol. 40 (1963) 5: 72-77. (From the Tarasevich State Control Institute of Medical Biological Preparations.)

As stated in the introduction to this article, Korobkova (Zh. mikrobiol. [1955] 4: 40) and some subsequent Soviet workers quoted by the author tried to use allergic skin tests for an assessment of plague immunity. Korobkova's "pestin" was not sufficiently purified to serve well for this purpose. Pavlova (Transactions of the "Mikrob" Institute [1958] Installment 2, p. 28) and Bakhrakh and associates (ibidem [1960] 4: 63) proposed as allergen the use of the polysaccharide-containing fraction of P. pestis obtained from the EV strain through hydrolysis with acetic acid. After purification the intracutaneous administration of these products caused a specific reaction in plague-immune test animals.

Since claims had been made that bacterial proteins could serve as allergens, the present authors investigated whether this held true in the case of the plague bacillus. They used for this purpose the method of Baker and co-workers (J. Immunol. 68 [1952], p. 131) of which they gave a description. Guinea-pigs immunized with live plague vaccine prepared from the strain EV 76 served as test animals, but a limited number

* GKI is the often used abbreviation for the Russian name of the Tarasevich State Control Institute--Gosudarstvennyi kontrol'nyi institut meditsinskikh biologicheskikh preparatov imeni Tarasevicha.

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of tests was made also on human volunteers. The results of these well documented observations were thus summarized by the authors:

1. With the aid of ammonium sulfate precipitation (40-60% saturation) a fraction was prepared from extracts of acetone-dried plague bacilli to which the name "Pest-allergen GKI" was given.

2. This pest-allergen, in a dose of 0.01 mg contained in 0.1 ml of normal saline, produced an allergic reaction in plague-immune guinea-pigs but not in normal controls.

3. The pest-allergen did not produce positive reactions in animals immunized with live vaccines against tularemia, brucellosis or tuberculosis.

4. Preliminary tests on 59 volunteers showed that the pest-allergen, administered intracutaneously, was innocuous for man. It produced a marked allergic reaction in persons who had been vaccinated against plague intracutaneously and many times by the cutaneous route.

166. Zil'fian, V. N. and Noramirian, A. V., Comparative action of novembichin, histamine and chicken egg-yolk on the development of experimental plague.
Zh. mikrobiol. 40 (1963) 5: 77-83.
(From the Armenian Anti-Plague Station.)

In the introduction to this article it is stated that, in order to detect latent forms of rodent plague or the natural occurrence of weakly virulent plague strains, recently various methods have been proposed to lower the resistance of the test animals and make them more susceptible to the infection.

Thus Kratinov (Voprosy patologii i immunologii chumy [Questions of the Pathology and Immunology of Plague], Stavropol', 1959) showed that a vitamin C deficiency lowers the resistance of the animals to different infections.

The possibility of using for the same purpose cortisone or allied preparations has been demonstrated by numerous workers abroad and in the Soviet Union.

Kuraev (Trudy n.-i. inst. "Mikrob." Saratov [1960] Installment 4, p. 369), trying various methods, obtained best results with the administration of trypan-blue and chicken

egg-yolk. Bratkova (1960--no reference given) found the last mentioned substance most useful. Avanian and Gubina (Zh. mikrobiol. [1961] 3: 92) used iron compounds to increase the virulence of P. pestis in experimentally infected guinea-pigs.

For their own work, in the course of which they experimented with 700 white mice and 66 guinea-pigs, the present authors used (a) Soviet-produced novembichin (embikhin No. 7), a new therapeutic preparation of the group of chlorethylamines; (b) histamine and (c) chicken egg-yolk, all subcutaneously administered together with the infecting dose. The latter was obtained either from a one-day old culture of the EV strain or from one of two plague strains isolated from common voles in 1959 which were weakly virulent for guinea-pigs but more virulent for white mice.

Summarizing the results of their well documented observations the authors stated that

1. The administration of novembichin, which exerts a strong action on the blood and the blood-producing organs and weakens the phagocytic activity of the body, creates conditions for an unimpeded multiplication and invasion of the plague bacillus. As a consequence of a marked suppression of the activity of the reticulo-endothelial system the mice become extraordinarily sensitive to plague infection. An adverse feature of the action of novembichin is a generalized auto-infection which penetrates from the intestines into the blood and not rarely kills the animals before the development of the plague infection.

2. Single administrations of chicken egg-yolk to white mice markedly increase their susceptibility to infection with weakly virulent or avirulent plague bacilli. The action of the egg-yolk was much more marked in white mice than in guinea-pigs; in the former it came to an acute infection; in the latter, to the development of chronic plague.

3. Under the action of histamine these resulted only an insignificant increase of the sensitivity of white mice to plague infection. The sensitizing action of histamine did not exert an influence on the length of life of the test animals. Consequently the use of histamine for speeding up the laboratory examinations offers no advantages.

4. The best results related to a lowering of the protective functions of the body against plague infection and an acceleration of the laboratory diagnosis of this

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infection were obtained with chicken egg-yolk and novembichin. Their use could be advantageous for more profound studies of plague foci, detection of a residual tendency to infection and the detection of weakly virulent plague strains under natural conditions.

167. Dalmatov, D. M., Clinical characteristics of the 1961 tularemia epidemic in Omsk. Author's review. Zh. mikrobiol. 40 (1963) 5: 83-84.
(From the Omsk Kalinin MI.)

As a result of a considerable water-rat epizootic in 1961 a major vector-borne tularemia epidemic in Omsk resulted. In the course of this epidemic the author was able to make careful clinical observations on 183 patients. It is noteworthy that only 14 of the sufferers had been vaccinated against tularemia - 3 three to four years previously and 11 shortly before they fell ill. Thus, as the author concluded with great reason, the epidemic was the result of an interaction of two factors - the presence of a large infection quantum among the water-rats and the absence of a herd immunity in the human population.

168. Sukhodoeva, G. S., Characterization of the properties of Rickettsia burneti strains from the natural Q-fever focus in the southern Kazakhstan. Zh. mikrobiol. 40 (1963) 5: 84-89.
(From the Institute of Regional Pathology, AS, Kazakh SSR and the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

In the summary to this article it is stated that

1. A study of the biological properties of 7 Q-fever strains, isolated in the natural focus of this infection in the foothills of the Zailiiskii Ala-Tau showed their moderate pathogenicity for laboratory animals.
2. The antigens of 4 of these local strains were serologically identified as Q-fever antigens; their specificity and the absence of anti-complementary properties were established.
3. In cross titration tests all antigens of the local strains either did not react at all with the type immune serum raised with the Grita strain or reacted but weakly--this shows that there were antigenic differences between the local and the Grita strains.

4. All the antigens of the local strains studied reacted at high titers with the type immune serum raised with the Central-Asiatic strain Termez and the Soviet strain Shorsher, which indicated a close antigenic relationship between these two and the local strains.

5. There was a close antigenic relationship between all locally isolated R. burneti strains.

169. Grennaus, G. I. et al., Some data on the study of Q-rickettsiosis in the city of Gor'kii and the Gor'kii Oblast. (Author's review.) Zh. mikrobiol. 40 (1963) 5: 90. (From the Gor'kii Institute of Epidemiology and Microbiology, the Oblast Veterinary Laboratory and the Oblast Sanitary-Epidemiological Station.)

As stated in this brief note, complement fixation tests with Q-fever antigen gave a positive result in 8.6% of 255 patients with feverish diseases hospitalized from 1956 to 1961. Such tests also gave a positive result in the sheep and goats and, to a lesser extent, also in the cattle of one raion of the oblast.

170. Ponomareva, T. N., To the problem of the bacteriological diagnosis of anthrax. Zh. mikrobiol. 40 (1963) 5:107-112. (From the Central Anti-Plague Observation Station MII, USSR.)

The conclusions to this article, which alone can be quoted, were that

1. The identification of the anthrax bacillus ought to be based upon the consideration of a complex of signs: the morphology of the bacilli and the colonies, the formation of spores, the formation of capsules in the body of animals (white mice and guinea-pigs), absence of motility, character of growth on gelatin, absence of hemolysis, pathogenicity for guinea-pigs and a positive outcome of precipitation tests according to Ascoli's method.

2. Of great diagnostic help are tests with specific phages, a positive result of "bead" tests (see Jensen and Kleemeyer, Zbl. Bakt., 1. Abt. Orig. 159 [1963], p. 494) and the method of fluorescent microscopy.

3. From anthrax patients who were treated with antibiotics the causative organisms could be isolated only during the first 3 to 4 days of illness.

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4. Except one strains isolated from a patient with cutaneous anthrax, the colonies of which were morphologically atypical, all strains isolated from man were typical in their fundamental properties.

5. One has to count, however, with the possibility of meeting atypical anthrax strains in the external environment. One such strain was actually found in the ground of an old burying ground for cattle.

171. Makarov, N. I. et al., Incidence of anthrax in animals and man in the Pre-Caucasus and Transcaucasus in 1960-61. (Author's review.) Zh. mikrobiol. 40 (1963) 5:112-113. (From the SR Anti-Plague Institute of the Caucasus and Transcaucasus, the Azerbaidzhan, Armenia, Georgian, North-Ossetian and Checheno-Ingush Republic Sanitary-Epidemiological Stations and the Azerbaidzhan Anti-Plague Station.)

The contents of this brief note do not lend themselves to a condensation.

172. Metelkin, A. I., The zoonoses of laboratory animals and their danger for man. Zh. mikrobiol. 40 (1960) 5:113-117.

This interesting article must be read in the original or in a full translation.

173. Kolendovich, A. I., A vector-borne tularemia outbreak in the outskirts of TSelinograd. Zh. mikrobiol. 40 (1963) 5:148-150. (From the Sanitary-Epidemiological Station of TSelin Krai.)

The author describes a vector-borne tularemia outbreak taking place in August-September 1958 on a sovkhos near TSelinograd and also involving inhabitants of that city who had visited the vicinity of the communal farm. In the latter tularemia manifestations had been recorded already in 1946, 1949 and 1954. At the time of the last mentioned outbreak tularemia vaccinations had been administered on the farm but apparently to only part of the inmates and, though many new people had afterwards arrived, immunizations were not continued. Conditions for an appearance of tularemia in 1958 were also favorable because a water-rat epizootic and an abundance of mosquitoes coincided with the hay harvest in which also city inhabitants participated.

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The total number of tularemia attacks recorded in August-September 1958 amounted to 232, of which 173 occurred on the farm and 77 among inhabitants of TSelinograd.

The energetic measures to combat the outbreak included wholesale vaccination on the farm. It was thus inevitable that persons were vaccinated who incubated tularemia or became infected soon after immunization. It is noteworthy that no untoward influence of the vaccination could be observed in this group of people.

In an area of 250 hectares in the floodlands of the Ishim River, where the hay harvest took place, anti-mosquito work was done with the aid of hexachlorane smokepots. Dimethylphthalate was issued to the farm workers as an insect repellent.

In his conclusions the author stressed the necessity of (a) verifying in tularemia-endemic localities the state of immunity of the population every year so as to be able to vaccinate all newcomers and (b) providing for the detection of all tularemia attacks through house-to-house inspections. Specific treatment with antibiotics had to be administered even if at first the attacks appeared to be slight.

174. Sorina, A. M., Anthrax attacks in man. Zh. mikrobiol. 40 (1963) 5:152-153.
(From the Sanitary-Epidemiological Station, Smolensk Oblast.)

Summarizing the results of observations made in the Smolensk Oblast in 1959 when 15 human attacks were recorded, the author stated that

1. Invariably cattle served as the source of infection in these instances.
2. All patients suffered from the cutaneous form of anthrax.
3. No instance of infection was noted among persons who consumed the raw milk of anthrax-affected cows.
4. A milder course and a somewhat atypical character of the disease was noted in the patients to whom for prophylactic purposes anti-anthrax serum had been administered.

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175. Levtova, K. Z. and Klodnitskaia, S. N., To the 50th anniversary of the detection of the role of camels in the epidemiology of plague. Zh. mikrobiol. 40 (1963) 5:152-153. (From the Order of Lenin First Moscow Sechenov MI and the SR Clinical Institute of the Moscow Oblast.)

In this historically interesting article the authors describe the discovery of natural plague in camels in the Astrakhan Government by Klodnitskii in 1911 and give an account of the subsequent observations made in this respect as well as of the experimental investigations undertaken in order to study the pathogenesis of the disease in these animals. They conclude their publication by stating that

"The problem of plague in camels is still of actual importance practically as well as theoretically. For instance in 1953 some camels succumbed to plague in western Turkmenia. In connection with the plague epizootic in 1953 special investigations were made by the workers of the Institute of Microbiology and Epidemiology of the South-East of the USSR, of the Central-Asian Anti-Plague Institute and also of the Turkmenian Anti-Plague Station. Together with other problems that of the mechanism of the natural plague infection of camels was solved.

V. N. Fedorov, in a report rendered at the scientific conference on the natural locality and epidemiology of specially dangerous infectious diseases held in 1957 recorded interesting data on the experimental plague infection of camels. The findings made led to the conclusion that the camels are susceptible to plague and can be experimentally infected with this disease. However, they show an individual susceptibility to P. pestis, as a result of which many camels recover from the disease and for this reason by far not all instances of the infection among them are recorded. A fundamental role in the mechanism of the infection is played by blood-sucking insects, among which the fleas are most important.

Thus the discovery of a role of the camels in the epidemiology of plague made almost 50 years ago by N. N. Klodnitskii was once more confirmed and fully documented by Soviet scientists.

The evidence adduced clearly shows the great practical importance of a constant prophylactic veterinary survey of the camels."

176. Votiakov, V. I., The types of the foci of tick-borne encephalitis and the fight against this disease in Belorussia.
Med. parasit. 32 (1963) 2:205-207.
(From the Belorussian SRI of Epidemiology, Microbiology and Hygiene, Minsk.)

A consideration of the ecological conditions led the author to the conclusion that in the fight against tick-borne encephalitis in Belorussia emphasis ought to be laid on endeavors to keep the cattle free from the vector-ticks (Ixodes ricinus).

177. Peterson, O. P. and Li Iui, Homologous interference between activated and inactivated vaccinia virus on the chorio-allantoic membrane of the chick embryo.
Vop. virus. 8 (1963) 2:159-163.
(From the D. I. Ivanovskii Institute of Virusology, AMS, USSR, Moscow.)

The conclusions of the authors were that

1. The vaccinia virus inactivated by heating and by ultraviolet irradiation interferes with the homologous virus on the chorio-allantoic membrane of the chick embryo.
2. The suppressive action of the inactivated virus is manifested not only by a lowering of the hemagglutination titer, but also of the infectious titer.
3. The interfering action was observed if the inactivated virus was introduced 48 hours after the active virus and not later than 8 hours after the introduction of the latter.
4. The interfering effect was linked to the virus particle itself and not to the hemagglutination of the virus.

178. Duan Suan-myou, Optimal pH and temperature conditions for the performance of hemagglutination tests with the virus of Japanese encephalitis cultivated in tissues in vitro. Vop. virus. 8 (1963) 2:176-180.
(From the D. I. Ivanovskii Institute of Virusology, AMS, USSR, Moscow.)

Quoted by title.

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179. Rezenova, A. I., Standardization of the conditions for the performance of the hemagglutination inhibition test with the non-infectious antigen of the tick-borne encephalitis virus. Vop. virus. 8 (1963) 2:180-184.
(From the Moscow SRI of Virus Preparations.)

The technical details of this article do not lend themselves to the purposes of a brief review.

180. Votikov, V. I., Materials to the study of tick-borne encephalitis in Belorussia. Report I. Course of experimental infection in Macaca rhesus monkeys. Vop. virus. 8 (1963) 2:184-189.
(From the Belorussian Institute of Epidemiology, Microbiology and Hygiene.)

Observations on ten Macaca rhesus monkeys which had been infected with tick-borne encephalitis strains isolated at the time of a considerable human outbreak of the disease in 1959 from patients and other sources led to the following conclusions:

1. In the monkeys experimentally infected with tick-borne encephalitis strains isolated in Belorussia one could observe two phase in the clinical course of the disease, the first being characterized by general manifestations of the infection, the second by neurological disturbances.

2. Characteristic for the first phase were an increase of the body temperature, congestion of the conjunctivae and the face, signs of headache, weakness and rapid faintness and an early disappearance of the defensive reflexes.

3. The phase of neurological disturbances ran its course with signs of meningo-encephalitis. The monkeys showed marked cerebellar disturbances (uncoordinated movements, ataxy) and hemipareses and paralyzes of a central origin.

4. The virus is present in the blood up to the 12th day of illness, maximally between the 4th and 7th day. In the brain it is observable for 14 days with a maximal occurrence from the 9th to the 14th day.

5. Anti-hemagglutinins appear in the blood during the first days of illness and show titers of up to 1:160.

181. Barkova, E. A. and Ierusalimskii, A. P., Dynamics of the accumulation of virus-neutralizing antibodies in patients with different clinical forms of tick-borne encephalitis. Vop. virus. 8 (1963) 2:189-193.
(From the Omsk SRI of Infectious Diseases with Natural Foci and the Department of Nervous Diseases of the Novosibirsk MI.)

An examination of 151 blood specimens from 49 patients led to the following conclusions:

1. Differences were detected in the dynamics of the accumulation of virus-neutralizing antibodies in relation to the various clinical forms of tick-borne encephalitis in its acute stage.
2. The titer of the antibodies rose very rapidly and highly in the frustrane form of the disease, reaching often high levels already in the first week.
3. In patients with affections of the membranes and substance of the brain the antibody accumulation took place rather slowly, reaching only in the third week of illness titers of diagnostic significance.
4. In the case of a two-wave course of the disease usually the virus-neutralizing antibodies could be detected only during the second period of fever or even after it.

182. Rodin, I. M. et al., Experimental serotherapy of the Omsk hemorrhagic fever. Vop. virus. 8 (1963) 2:193-199.
(From the Institute of Poliomyelitis and Virus Encephalitides, AMS, USSR.)

In the introduction to this article the authors state that convalescent serum had been successfully used for the treatment of Omsk hemorrhagic fever (Akhrem-Akhremovich, Tez. doklad. 4-i nauchn. sessii Inst. Nevrologii AMN SSSR, posviashch. probleme kraevoi infekts. patologii [Abstracts of Papers at the 4th Scientific Session of the Institute of Neurology, AMS, USSR, Devoted to the Problem of the Pathology of Regional Infections, 1949]), but that no further studies on the serotherapy of this disease had been made. In the course of recent studies the authors were able to produce in horses an anti-encephalitis serum, the gamma-globulin of which proved effective under experimental conditions. In the present paper they record satisfactory results in the treatment of mice and monkeys infected with

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hemorrhagic fever with the gamma-globulin of a serum which had been obtained from horses hyperimmunized simultaneously against tick-borne encephalitis and Omsk hemorrhagic fever.

183. Romanenko, V. F. and Siurin, V. N., Studies on the biological properties of cultural variants of the sheep pox virus. Vop. virus. 8 (1963) 2:224-229.
(From the All-Soviet SRI of Veterinary Virology and Microbiology, Ministry of Agricultural, USSR, Moscow.)

The results obtained in this work must be studied in the original or in a translation.

184. Beklemishev, V. N.,* A contribution to the study of the infectibility of ticks, the vectors of tick-borne encephalitis, by the method of bio-assay.
Vop. virus. 8 (1963) 2:240-242.
(From the E. I. Martsinovskii Institute of Parasitology and Tropical Medicine, MH, USSR, Moscow.)

This article does not lend itself to the purposes of condensation.

185. Segal, L. S. et al., Materials to the characterization of the focus of tick-borne encephalitis in Trans-Carpathia. (Annotation.) Vop. virus. 8 (1963) 2: 245.
(From the Uzhgorod Institute of Epidemiology, Microbiology and Hygiene and the Sanitary-Epidemiological Station of the Trans-Carpathian Oblast.)

As stated in this brief note, 63 attacks of tick-borne encephalitis have been recorded in the Trans-Carpathian Oblast during the period from 1947-1960, infection being mainly due to the consumption of raw goat milk. Vaccination of the consumers of such milk against tick-borne encephalitis is recommended.

186. Vereta, L. A., Experimental foundation for the alimentary transmission of tick-borne encephalitis. (Annotation.) Vop. virus. 8 (1963) 2:245-246.
(From the Khabarovsk SRI of Epidemiology and Microbiology.)

* There is evidence that this distinguished scientist died recently.

Since alimentary infections are responsible in the Khabarovsk Krai for severe attacks of tick-borne encephalitis with a high mortality, the author of this note studied this problem with the aid of experiments on two goats. One of these animals, infected intramuscularly and subcutaneously, showed the virus in its blood and milk and both animals showed serological evidence of the infection.

Alimentary infection of white mice with sublethal doses of the virus did not cause illness but led to the appearance of antibodies in the blood.

Because of these findings the author expresses belief in the importance of the alimentary mode of infection in tick-borne encephalitis.

187. Akatova, E. M., Conditions and methods of inactivation of the smallpox virus and other viruses of the group of vaccinia viruses. (Annotation.) Vop. virus. 8 (1963) 2: 247.
(From the Moscow I. I. Mechnikov SRI of Vaccines and Sera.)

This brief note, wherein the author records data on the action of various disinfecting agents on the smallpox, vaccinia and alastrim viruses, does not lend itself to a condensation.

188. List of noteworthy papers quoted in a reference list published in the journal Meditsinskaya parazitologiya i parazitarnye bolezni 32 (1963) 2:230-233.

Tick-borne encephalitis

- 1) Vasilenko, E. P., Protective action of linen treated with DDT dust in foci of tick-borne encephalitis. Trudy Novosibirskogo oblastnoi san.-epid. stantsii (Transactions of the Novosibirsk Oblast Sanitary-Epidemiological Station) 38 (1961): 131-133.
- 2) Valsenko, N. M. et al., The problem of urban tick-borne encephalitis foci (according to observations in Novosibirsk). Ibidem, pp. 12-24.
- 3) Vlasenko, N. M. and Filippova, E. G., Epidemiological characterization of the Novosibirsk urban tick-borne encephalitis focus and the adjacent village foci. Ibidem, pp. 5-11.

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- 4) Dubov, A. V., Use of tissue cultures for virusological and serological studies on tick-borne encephalitis. Ibidem, 64-74.
- 5) Erokhin, N. M., On the epidemiology and prophylaxis of tick-borne encephalitis in the Novosibirsk Oblast. Ibidem, pp. 122-130.
- 6) Ierusalimskii, A. P. et al., Clinical characterization of tick-borne encephalitis in the Toguchinskii Raion of the Novosibirsk Oblast during the season of 1960. Ibidem, pp. 94-100.
- 7) Karpov, S. P. et al., Problems of sanitation of a natural tick-borne encephalitis focus in an inhabited locality. Ibidem, pp. 134-144.
- 8) Kuimov, D. I., Contribution to the clinique of atypical and rare syndromes of tick-borne encephalitis. Ibidem, pp. 109-121.
- 9) Lozinger, G. K., Zoological and parasitological premises of tick-borne encephalitis in the taiga and forest-steppe of the foothills of the Salair. Ibidem, pp. 40-53.
- 10) Mitrokhina, L. A., Peculiarities of the clinique of tick-borne encephalitis in an urban population. Ibidem, pp. 75-80.
- 11) Mitrokhina, L. A. et al., Results of the retrospective observation of persons passing the station for the prophylactic administration of gamma-globulin in connection with tick-bites. Ibidem, pp. 81-85.
- 12) Nestriakova, T. S., Zoological and parasitological premises of tick-borne encephalitis in the landscape of the pine-forest reserve and the zone of agricultural exploitation (according to investigations in the Novosibirsk Rural Raion). Ibidem, pp. 29-39.
- 13) Sivanova, I. S., Contribution to the problem of the immunobiological state of wild small mammals in the urban and the adjacent village foci of tick-borne encephalitis (according to investigations in Novosibirsk). Ibidem, 59-63.
- 14) Velikov, K. A. and Obraztsova, S. K., The efficacy of autoliquor-therapy in the progressive form of tick-borne encephalitis. Trudy Kalininskogo med. inst. (Transactions of the Kalinin MI) 8 (1962): 221-225.

- 15) Postnova, M. A., Remote results of tick-borne encephalitis in the Kalinin Oblast. Ibidem, pp. 250-253.
- 16) Veselov, IU. V. et al., The geographical raionization of the Gorny Altai and the distribution of tick-borne encephalitis. Problemy med. geografii. Doklad k pervomu n. soveshch. po problemam med. geog. (Problems of Medical Geography. Report at the First Scientific Meeting on the Problems of Med. Geog.), Leningrad (1962) pp. 171-174.
- 17) Drozdova, IU. V. et al., Peculiarities of the distribution and tick-infestation of the small mammals in the tick-borne encephalitis focus of the Gorny Altai. Ibidem, pp. 77-79.
- 18) Ivanova, L. M. and Neronov, V. M., Experience of mapping the distribution of tick-borne encephalitis in the USSR. Ibidem, pp. 163-164.
- 19) Mishin, A. V. and Gerasimova, E. N., Contribution to the problem of mapping the natural foci of tick-borne encephalitis. Ibidem, pp. 180-182.
- 20) Pavlukhin, S. M., The landscapes of Western Siberia and the distribution of tick-borne encephalitis. Ibidem, pp. 72-74.
- 21) Mel'chakova, E. D., On the contact action of chlorofos on the tick Ornithodoros lahorensis. In Parazity sel'sko-khoziaistvennykh zhyvotnykh Kazakhstana. Trudy inst. zool. AN Kazakhskoi SSR (Parasites of the Agricultural Animals of Kazakhstan. Transactions of the Institute of Zoology, AS, Kazakh SSR), Alma Ata (1962) 1:247-250.
- 22) Mamedov Shakhmal et al., The new acaricide "Efiran-B." Dokl. AN Azerbaidzhanskoi SSR 18 (1962) 6: 53-56.
- 23) Petrova, S. S., Study of the tick-borne encephalitis strains isolated in the Chita Oblast. Voprosy epidemiologii, bakteriologii, gigien, parazitologii i virusologii. Tezisy dokladov (Questions of Epidemiology, Bacteriology, Hygiene, Parasitology and Virusology. Abstract of Papers), Dushanbe (1962) pp. 178-179.
- 24) Rezepova, A. I., Study of the hemagglutinating properties of the tick-borne encephalitis virus prepared by various methods. Ibidem, pp. 170-180.
- 25) Tagil'tsev, A. A., Peculiarities of the biology of blood-sucking ticks as foundation of a determination of their role in the natural foci of vector-borne diseases. Ibidem, pp. 149-150.

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- 26) Sotnikova, A. N. and Soldatov, G. M., On the characterization of the tick-borne encephalitis focus in the Chuguev Raion of the Primorskii Krai. Dokl. Irkutsk. protivochumn. inst. (Papers of the Irkutsk Anti-Plague Institute, 1962) Inst. 3: 83-85.
- 27) Feoktistov, A. Z., Isolation of the tick-borne encephalitis virus from warm-blooded animals in early spring. Ibidem, pp. 89-90.
- 28) Feoktistov, A. Z. et al., Results of a three years' study of tick-borne encephalitis in the Komsomol' Raion of the Khabarovsk Krai. Ibidem, pp. 80-82.
- 29) Idem: Stages of the survival of field-mice as a micro-focus of tick-borne encephalitis in the Khabarovsk Krai. Ibidem, pp. 86-88.

Brucellosis

- 30) Guzeva, A. A. and Zamakhaeva, E. I., Experimental infection of the tick Dermacentor marginatus Sulz. with brucellosis. Trudy n.-i. protivochumn. inst. Kavkaza i Zakavkaz'ia (Transactions of the SR Anti-Plague Institute of the Caucasus and Transcaucasus), Stavropol' (1961) vyp. 5: 217-267.
- 31) Khrushcheva, N. F., Experiences on the transmission of brucellae to wild and laboratory rodents through ticks of the genus Dermacentor. Trudy inst. kraevoi patologii AN Kaz. SSR (Transactions of the Institute of Regional Pathology, AS, Kazakh SSR) 12 (1962): 33-39.
- 32) Khrushcheva, N. F. and Rementsova, M. M., Experiences on the transmission of brucellae to sheep and goats through the ticks Ornithodoros lahorensis and Dermacentor marginatus. Ibidem, pp. 40-46.
- 33) Timofeev, A. F., Changes of brucellae of the bovis and melitensis types under the influence of the body of ixodes ticks and titration of the brucella strains. Izv. AN Kirgiz. SSR, seriia biol. nauk 4 (1962) 5: 15-26.

Hemorrhagic fever

- 34) Netskii, G. I. et al., Materials to the geography of Omsk hemorrhagic fever in Western Siberia. Problemy med. geog., Leningrad (1962), pp. 143-144.

Q-fever

- 35) Kusoy, V. N. et al., Contribution to the problem of infection of ticks of the genus *Ornithodoros* with Q-fever. In Parazity sel'sko-khoziaistv. zhivotnykh Kazakhstana. Trudy inst. zool. AN Kazakhskoi SSR, Alma Ata (1962) 1:229-235.

Tularemia

- 36) Ostrovskaya, M. N., Isolation of tularemia bacilli from ixodes ticks in the Kara-Kalpak ASSR. Med. zh. Uzbekistana (1962) 11: 43-44.

Insect repellents

- 37) Maslov, A. V., Materials to the investigation of the efficacy of some new repellents for the protection against ticks and insects. Dokl. Irkutsk. protivochumn. inst. (1962) Inst. 3:168-170.
189. Klassovskii, L. N., On some peculiarities of the process of adaptation of various plague strains to streptomycin on artificial nutrient media. Antibiotiki 8 (1963) 5:444-449.
(From the Central-Asian SR Anti-Plague Institute.)

The aim of the author of this article was to study the peculiarities of the development of streptomycin resistance in various (9) plague strains serially subcultivated on Hottinger's digest agar with a successively increased content (up to 1,000 units per ml) of this antibiotic. The conclusions reached through these observations, for the details of which the original or a translation must be consulted, were that

1. According to the character of their reaction to the presence of streptomycin in the nutrient media one may distinguish 4 types of plague strains: sensitive; weakly resistant; highly resistant and streptomycin-dependent; and highly resistant and not dependent strains.

2. The dynamics of the development of the streptomycin resistance of the various plague strains in the course of serial subcultivation on agar with a successively increased

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streptomycin content may show substantial peculiarities. Schematically one may distinguish three types of adaptation of the bacterial populations to streptomycin: 1) Full type: Sensitive → weakly resistant → highly resistant and streptomycin dependent; 2) Transitory type: Sensitive - weakly resistant → highly resistant and not dependent; and 3) Reduced type: Sensitive → highly resistant and independent form.

It is important to note from the text that all strains found to fall into the second or third categories (transitory or reduced types) differed from the classical type of P. pestis by the fermentation of rhamnose or the loss of virulence. In the author's opinion these two types of adaptation to streptomycin were indicative of a "saprophytization" of the organisms.

The author admitted that in view of the limited number of strains examined his results might not be universally valid.

190. Martirosian, S. P., Treatment of brucellosis with the transfusion of immune blood in combination of intravenous administration of vaccine. Vrach. delo (1963): 143-144.
(From the Aparansk Raion Hospital.)

In this brief note the author records the results of alternate administrations of the blood of persons who had recovered from brucellosis and of brucellosis vaccine to 70 patients suffering from this disease. At an average each of the sufferers was given five blood transfusions and four vaccine injections. Clinical recovery was observed in 40% of the patients, considerable improvement also in 40%, some improvement in 17% and slight improvement in 2.9%. Relapses were observed in 10 instances.

The author recommends his method of treatment.

191. Desiatskova, R. G. et al., The role of ribonucleic acid (RNA) of the tick-borne encephalitis virus in the pathogenesis of experimental infection in mice. Vop. virus. 8 (1963) 3:275-278.
(From the Moscow SRI of Virus Preparations.)

For their study the authors administered to white mice intracerebrally 0.03 ml amounts of horse serum containing antibodies against tick-borne encephalitis and after 24 hours

infected groups of the animals intraperitoneally with (a) RNA prepared from the tick-borne encephalitis strain Pan and (b) native virus. Mice preliminarily treated with normal horse serum served as controls.

To illustrate the results of their experiments, the authors stated that in one of their typical tests the administration of 3 lg LD₅₀/ml of the native virus or of 3.5 lg LD₅₀/ml of its RNA caused not a single instance of illness among groups of 10 mice each, which had been injected with the immune serum. There were 4 instances of illness each in the corresponding control groups which had been preliminarily treated with normal horse serum. The incubation period was 8-9 days when RNA was used and 7 days after infection with the intact virus.

The authors postulated that the appearance of illness in the mice injected with RNA was due to the development of the complete virus at the site of inoculation. The above mentioned differences in the length of the incubation period supported this view.

192. Peterson, O. P. and Li Iui, Preparation of interferon from chicken fibroblast cultures treated with inactivated vaccinia virus. Vop. virus. 8 (1963) 3:279-281.
(From the D. I. Ivanovskii Institute of Virology, AMS, USSR, Moscow.)

The concluding sentence of this article, the contents of which do not lend themselves to the purpose of a brief review, is that

"The data recorded in this as well as in our preceding publication (see Vop. virus. 8 [1963] 2: 3) show that the vaccinal interferon differs from the inactivated vaccinia virus which is also endowed with inhibitory properties."

193. Chumakov, M. P. et al., Comparative study of the epidemiological efficacy of tissue cultures and brain vaccines against tick-borne encephalitis. Vop. virus. 8 (1963) 3:307-315. (From the Institute of Poliomyelitis and Virus Encephalitis, AMS, USSR, Moscow and the Sanitary-Epidemiological Station of the Kemerovsk Oblast.)

The conclusions reached in this well documented article were that

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1. In 1961-1962, in the course of epidemiological studies in the Kemerovsk Oblast, investigations were made on the epidemiological efficacy of inoculations with the tissue-culture and brain vaccines against tick-borne encephalitis.

2. In 1961, when the risk of infection was lowered, a 22-35-fold decrease of the morbidity was noted among the persons immunized with the culture vaccine and only a 1.7-3.6-fold decrease among those protected with the brain vaccine.

3. In 1962, when there was an increased risk of infection, one could observe a 2.5-4.3-fold lowering of the morbidity in the persons protected with the culture vaccine and a 10-15-fold decrease after re-vaccination. The corresponding figures in the persons inoculated with the brain vaccine were 1.3 and 1.9-2.8.

One could note a disappearance of the paralytic form of tick-borne encephalitis and a 2.3-fold decrease of attacks of the meningeal form of the disease. The vaccinations exerted only an inconsiderable influence on the frequency of febrile cases.

4. The adsorbed culture vaccine possesses a marked epidemiological efficacy, surpassing that of the brain vaccine. Still, in order to produce a solid immunological transformation of the body it is indispensable to administer at the onset of the epidemic season besides an initial course of vaccination also re-vaccinations. The optimal time for the administration of the latter has still to be determined.

5. Prospects are good for the large-scale practical use of the cultural adsorbed vaccine against tick-borne encephalitis.

194. L'vov, D. K. and Zaklinskaia, V. A., Use of the hemagglutination inhibition test for investigations of the immunogenic properties of formolized vaccines against tick-borne encephalitis. Vop. virus. 8 (1963) 3:360-361.
(From the Institute of Poliomyelitis and Virus Encephalitides, AMS, USSR.)

The authors conclude their article by stating that the hemagglutination inhibition test proved useful for the purpose mentioned in the title in animal experiments as well as for observations on human beings immunized against tick-borne encephalitis.

195. Chervonskii, V. I., An instance of familial infection with ornithosis. Vop. virus. 8 (1963): 369. Annotation.
(From the D. I. Ivanovskii Institute of Virology,
AMS, USSR, Moscow.)

Quoted by title.

196. Vasil'eva, V. L., Study of the infection rate of ticks with the tick-borne encephalitis virus in the Kiev, Chernigov and Zhitomir oblasts. Vop. virus. 8 (1963) 3: 368. Annotation. (From the Kiev IEM.)

Examinations of 4,170 ticks of the species Ixodes ricinus and Dermacentor pictus with the aid of intracerebral passages through mice led to the isolation of five strains of neurotropic viruses. Clinical observations of the infected mice and neutralization tests showed that these strains fell into two groups, (a) such similar to the tick-borne encephalitis virus and (b) such resembling the virus of lymphocytary choriomeningitis.

197. Vereta, L. A. et al., Contribution to the problem of the specificity of the hemagglutination inhibition reaction. Vop. virus. 8 (1963) 3: 368. Annotation. (From the Khabarovsk SRI of Epidemiology and Immunology.)

Investigations of a wide range of materials proved the specificity of the hemagglutination inhibition reaction in the case of tick-borne encephalitis.

198. Ogorodnikova, Z. I., Peculiarities of the multiplication of the vaccinia virus in chick embryos. Report I. Vop. virus. 8 (1963) 3: 369. Annotation.
(From the I. I. Mechnikov Vaccine and Serum Institute,
Moscow.)

Quoted by title.

199. Tokarevich, K. N. et al., Ornithosis infections in Leningrad. Vop. virus. 8 (1963) 3: 372. Annotation.
(From the Pasteur IEM, Leningrad.)

Quoted by title.

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200. Skopichenko, N. F., A sporadic case of ornithosis. Vrachebnoe delo (1963) 6:138-140.

(From the Clinic for Internal Diseases of the Kiev MI.)

Quoted by title.

201. Likhonos, A. N., Experience of the fight against brucellosis in the Stavropol' Krai. Zh. mikrobiol. 40 (1963) 6: 3-8. (From the Sanitary-Epidemiological Station of the Stavropol' Krai.)

The author ascribes the marked reduction of the brucellosis incidence in the Stavropol' Krai since 1957 to the implementation of the following program of measures: (a) Complex anti-brucellosis operations in all farms, regardless whether or not their sheep were infected, undertaken in close cooperation by the medical and veterinary staff and supported by the Soviet and party organs; (b) Closing of the isolation stations for brucella-affected sheep; (c) Improvement of the brucellosis diagnosis in the sheep, immediate slaughter of all animals found infected and anti-brucellosis vaccination of the herds; (d) Mass vaccination of the rural human population.

202. Balandin, G. A., On the inexpediency of vaccine prophylaxis against cattle-type brucellosis. Zh. mikrobiol. 40 (1963) 6: 8-12.

(From the SR Anti-Plague Institute, Rostov/Don.)

In the opinion of the author of this article the administration of the usual anti-brucellosis vaccines for the prevention of cattle-type brucellosis is not only useless but even harmful because inducing a sensibilization (pathergic state) of the body of the vaccinated persons. He recorded in this connection that, while during the periods from 1958-1960 in the Ukraine (where mass anti-brucellosis vaccinations were administered) the number of brucellosis foci of all types continuously decreased, at the same time the incidence of human brucellosis infections contracted from the cattle incessantly rose. He postulated that

"Without any doubt a part of these attacks were connected not only with an infection from the brucellosis-affected cows but also with prior or subsequent vaccinations and re-vaccinations of the people with live brucellosis vaccine."

It appeared necessary under these conditions to use general sanitary measures for the fight against cattle-type brucellosis.

203. Klimova, T. K. et al., Some data on tularemia in the Arkhangelsk Oblast. Zh. mikrobiol. 40 (1963) 6: 48-54.
(From the Leningrad Port and Municipal Anti-Plague Observation Stations.)

The conclusions reached by the author of this well documented article were that

1. Tularemia attacks were recorded in the Arkhangelsk Oblast from 1949 to 1959 (the total case incidence amounting to 1,245). This confirms the existence of natural foci of the infection.
2. The tularemia foci in the oblast are mainly of the floodland-marsh type and in correspondence with this the outbreaks are mostly vector-borne.
3. The outbreaks in the Krasnoborsk and Verkhne-Toemsk raions in 1957 (84 and 104 cases respectively) were vector-borne and occurred from July to September in the floodlands of the rivers and rivulets. 98% of the attacks were of the ulcero-bubonic type.
4. Notwithstanding the presence of natural tularemia foci in the oblast the occurrence of the disease in man could be cut short through timely conducted vaccination campaigns. It is indispensable, however, to implement at the same time other measures, such as regularly organized hunting of the water-rats, musk-rats and hares and a systematic fight against the blood-sucking arthropods and diptera.

204. Fedorova, N. I. and Diuisaltseva, R. G., The relationship between the immunogenic activity and the phase variability of Rickettsia burneti. Zh. mikrobiol. 40 (1963) 6: 68-74.
(From the Gamaleia IEM, AMS, USSR.)

The two authors summarized the results of their carefully made observations by stating that

1. The phasic variants of R. burneti, due to the adaptation of the organisms either to the yolk sacs of chick embryos or to the body of laboratory animals differ not only

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in regard to their serological activity but also immunogenically. The strains in the first phase proved to be more immunogenic than those in the second phase (i. e. adapted to the yolk sacs of chick embryos); if used for the infection or immunization of experimental animals they produced "early" and "late" antibodies.

2. During adaptation to chick embryos the immunogenic activity of the R. burneti strains decreased. If guinea-pigs were infected with strains in the second phase, mainly "early" antigens were produced, the "late" antigens becoming present only at very low titers; the latter antibodies did not at all appear after immunization.

3. During adaptation to the yolk sacs of chick embryos apparently the change of the serological activity of the R. burneti strains took place more rapidly than that of the immunogenicity. Strains, the antigens of which did not react any more with immune sera of the early stages after infection, were still capable of producing "late" antibodies in infected or immunized laboratory animals. The strains lost the ability of producing these antibodies only after numerous passages through chick embryos.

4. Guinea-pigs immunized with the antigen of rickettsiae in the first phase (and thus possessing "early" and "late" antibodies) proved more resistant to challenge than the animals immunized with the antigen of Phase II rickettsiae.

5. In skin tests on rabbits and in neutralization tests in mice no difference could be found between immune sera containing both "early" and "late" antibodies or solely the former.

6. Because of this evidence it is advisable to manufacture Q-fever vaccines with R. burneti strains in the first phase.

205. Pisarevskii, IU. A., Anatomo-physiological features of the respiratory system of man and animals in the genesis of the immunity following aerosol vaccination. Report II. Protective function of the lung parenchyma and of the lymphatic system of the respiratory organs. Zh. mikrobiol. 40 (1963) 6:101-105.

The conclusions reached by the author of this amply documented study were that

"1. An indispensable prerequisite for the development of an active immunity following aerosol vaccination is the interaction between the vaccine and lymphoid tissue of the respiratory system.

2. The penetration of the vaccinal cells into the lymphatic system from the upper respiratory passages takes place through the capillaries of the lymphatic system of the mucosa and the lymphoid agglomeration of the throat which are best developed in man and in the highest animals.

3. The penetration of the live cells of the vaccine into the lymphoid tissue takes place on account of the resorptive function of the lymphatic capillaries as a whole, the barrier-creating properties of the lymph nodes and the phagocytic activity of the macrophages, which transport all foreign materials from the lung parenchyma into the lymphatic system."

206. Morozov, M. A. et al., Stability of dry smallpox vaccines treated with penicillin. Zh. mikrobiol. 40 (1963) 6:105-108. (From the Gamaleia IEM, AMS, USSR.)

The investigations of the authors, the technical details of which must be studied in the original or in a translation, led to the conclusion that treatment of the vaccinal detritus with penicillin for the purpose of freeing it from the contaminating microflora did not exert an adverse influence on the period of potency of the smallpox vaccine.

207. Taran, I. F. et al., Characterization of the immunity following cutaneous inoculation and re-vaccination with a vaccine prepared from the Brucella abortus strain 104-M. Zh. mikrobiol. 40 (1963) 6: 128. Authors' summary. (From the SR Anti-Plague Institute of the Caucasus and Transcaucasus.)

The authors of this note concluded from their observations that

"the immunity against brucellosis is most of all of a barrier-creating character and able to inhibit only small doses of the infectious agent immediately after their introduction. Even after the optimal intervals (6 and 9 months) the

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intensity of the immunity remains relative. Thus, though the vaccinal strain Br. abortus 104-M proved to be more immunogenic than the Br. abortus 19 vaccine, its use does not finally solve the problem of the specific prophylaxis against brucellosis."

208. Tav'ev, B. M. and Malysheva, M. N., Some epidemiological peculiarities of an anthrax outbreak in one of the sovkhoses of the Saratov Oblast. Zh. mikrobiol. 40 (1963) 6: 129. Authors' summary.
(From the Saratov Oblast Department of Public Health and the Sanitary-Epidemiological Station of the Oblast.)

One of the peculiar features of this anthrax outbreak was that only one out of the affected persons was in direct contact with domestic animals, whereas the other four came in contact only with the meat of a sheep (?) which had succumbed to anthrax. 375 persons who ate food prepared from the meat of animals slaughtered because of illness (Notschlachtung) remained healthy. The diagnosis was confirmed through microscopic and cultural examinations and tests on the affected animals, while tests with anthraxin, made 24-38 hours after onset of the disease on the patients, invariably gave a negative result.

According to the authors,

"Important factors conditioning the appearance of the disease in man were the absence of regular vaccination of the domestic animals against anthrax, insufficient attention paid by the veterinary workers to deaths among the sheep and goats (summarily called "small horned cattle" in Russian) and the late use of bacteriological methods."

The authors made proposals for an improvement of this state of affairs, emphasizing the need for the use of bacteriological examinations in addition to the anthraxin test.

209. Drankin, D. I., Investigation of the milk of the Novokuznetsk market for the presence of brucellosis.
Zh. mikrobiol. 40 (1963) 6: 130. Author's summary.

As described by the author of this note, 488 samples of cow milk offered for sale on the Novokuznetsk markets were

tested in 1960-1961 for the presence of brucellosis infection. Three methods were used for this purpose - agglutination tests with the whole milk and with its serum, and ring precipitation tests with colored antigen. Positive results with at least one of these tests were obtained in 48 instances (9.8%), doubtful results in 22 instances (4.5%). Uniform results with all three tests were obtained in 86.7%.

The author pointed out, however, that in Novokuznetsk during the period of these tests (1960-1961) there occurred only one case of recent brucellosis infection possibly due to the consumption of raw marketed milk.

210. Martsupol'skii, B. R., To the problem of the liquidation of infections. (To the statement of Sh. D. Moshkovskii. [See Abstract No. 675].) Zh. mikrobiol. 40 (1963) 6:135-136. (From the Sanitary-Epidemiological Station of the Alma-Ata Section I of the Kazakh R.)
211. Drankin, D. I. et al., To the liquidation of infectious diseases. Zh. mikrobiol. 40 (1963) 6:136-140. (From the Novokuznetsk Institute for ATP.)

The general idea of both these articles, the contents of which do not lend themselves to the purpose of a brief analysis, is expressed by the concluding statement of Martsupol'skii to the effect that

"one can speak of the liquidation of an infection only in the case of a destruction of its causative agent as a biological species in the whole world. It is not permissible today to announce the liquidation of an infection and tomorrow to begin again with its liquidation or to continue prophylactic measures against it. At present we can speak only of the prevention of the manifestation of some infectious diseases and the decrease of the morbidity due to other infections."

212. Chasovnikov, A. A., Review of the work Military Epidemiology (Voennaia epidemiologiia) edited by I. I. Rogozin, Leningrad (1962). Zh. mikrobiol. 40 (1963) 6: 145-149.

This exhaustive and on the whole favorable review can be quoted by title only.

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213. Kiseleva, V. M. et al., Isolation of brucellae from the eyes of guinea-pigs after extra-ocular infection.
Zh. mikrobiol. 40 (1963) 7:120-125.
(From the Kazakh MI, the Central-Asiatic Anti-Plague Institute and the Kazakh SR Veterinary Institute.)

The authors summarized the result of their observations by stating that

1. The frequency of the isolation of brucella cultures from the tissues and fluids of the eye of guinea-pigs one month after subcutaneous infection with virulent strains depends not only upon the infection quantum but also upon the individual properties of the test animals. Still, even if minimal doses of a virulent strain are used, it may be possible to obtain positive cultures from the eyes of all or almost all animals under test.

2. A bacteriological examination of the conjunctival secretions deserves to be widely used for the laboratory diagnosis of brucellosis in man and animals during the early stages of the infection.

3. The period during which brucellae may be cultivated from the tissues and fluids of the eye after subcutaneous infection are not long and stand in relation to the infection quantum and the individual peculiarities of the test animals.

4. In the case of experimentally produced endogenous brucellosis affections of the type of kerato-iridocyclitis it is possible to isolate the brucellae with the aid of cultural methods or animal experiments; chances of obtaining positive results decrease hand in hand with a prolongation of the interval between infection and the onset of the inflammatory process in the eye.

5. Subcutaneous vaccination with brucellae of the strain Br. abortus bovis 19 ensures better results in regard to the appearance and length of a resistance of the eye tissues to an invasion of brucellae than vaccination by the enteral or intranasal routes.

214. Ostrovskaya, N. N., The biological characterization of inagglutinable cultures of Brucella melitensis.
Zh. mikrobiol. 40 (1963) 7:125-132.
(From the Gamaleia IEM, AMS, USSR.)

The author concluded from an examination of 10 inagglutinable cultures of Br. melitensis that

1. These cultures proved typical as far as their morphological and cultural properties and the ability to reduce aniline dyes were concerned. Distinguishing features were the presence of signs of dissociation and loss of the agglutinability with specific anti-brucellosis serum. In these respects they were identical with the growths described by Drozhevskina (Zh. mikrobiol. 1954, 5: 24) as V-cultures.

2. The inagglutinable cultures were to a varying degree less virulent than the agglutinable growths. Some of the inagglutinable strains under test possessed a higher degree of residual virulence due to the presence of a small percentage of not dissociated agglutinable organisms.

3. In contrast to the opinion of Drozhevskina the author postulated that the inagglutinable brucella strains are merely cultures in a state of dissociation with a lowered virulence, a changed antigenic structure and weak antigenic properties.

4. For the identification of such freshly isolated brucella cultures the use of corresponding agglutinating sera is advisable.

215. Savitskaia, E. P., A method for the in vitro determination of the sensitivity of Rickettsia burneti to antibiotics. Antibiotiki 8 (1963) 6:512-516.
(From the Gamaleia IEM, AMS, USSR.)

In this paper, the technical details of which must be studied in the original or in an adequate translation, the author describes a method of determining the influence of various antibiotics by the observation of the differences of growth of the organisms in tissue cultures made from chick embryo fibroblasts to which these therapeutic agents have added and in control tubes free of them. The antibiotics were found to impede the multiplication of the rickettsiae in the cytoplasm of the fibroblasts, and to reduce the number of cells attacked by the organisms as well as the cytopathogenic activity of the latter.

216. Fedorov, IU. V., The influence of antibiotics on the production of specific antibodies in experimental tick-borne encephalitis. Antibiotiki 8 (1963) 6:520-524.
(From the Tomsk SRI for Vaccines and Sera.)

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The conclusions reached in this study were that

1. The administration of penicillin or streptomycin in therapeutic doses simultaneously with the immunization of rabbits with the virus of tick-borne encephalitis leads to a stimulation of the virus-neutralizing antibodies during the first cycle of immunization and to an inhibition of the immunogenesis in the subsequent cycles, which was more marked in the case of streptomycin.

2. The administration of small penicillin doses exerts no influence on the increase of the virus-neutralizing activity of the serum. If streptomycin is used in the same manner, one observes a marked increase of the virus-neutralizing activity in the first cycle and an inhibition of this activity in the following cycles.

3. Streptomycin exerts a marked stimulating action on the production of antibodies inhibiting hemagglutination in the first cycle of immunization and in the subsequent cycles a profound inhibition of the formation of these antibodies. The administration of penicillin leads to a clearly marked process of inhibition of the antibodies in question.

4. The administration of penicillin at the acme of immunogenesis exerts no influence on the production of specific antibodies. Under the same circumstances streptomycin administration inhibits the formation of hemagglutination-inhibiting antibodies.

217. Ezhov, V. I., Action of antibiotics on the causative agents of pasteurellosis in vitro and in animal experiments. Antibiotiki 8 (1963) 7:621-625.
(From the Antibiotics Laboratory of the All-Soviet Institute of Experimental Veterinary Medicine.)

Studies on 93 epizootic and on two vaccinal pasteurella strains showed that all these organisms were highly sensitive to monomycin, colimycin, mycerin, neomycin, polymixin M, oleandomycin, penicillin, chlortetracycline and oxytetracycline. No difference existed in this respect between freshly isolated and museum strains.

Monomycin, colimycin, mycerin, neomycin, polymixin M, bicillin 1 and 3, oxytetracycline and dibiomycin proved therapeutically effective in white mice experimentally infected with pasteurellae.

It would seem advisable to use monomycin, polymixin M, bicillin-3 and dibiomycin tentatively for the treatment and prophylaxis of pasteurellosis in domestic mammals and birds.

218. Maslov, O. K. et al., An instance of combined treatment of severe botulism with the use of controlled respiration. Sov. med. 27 (1963) 6: 139.

(From the Clinic of Hospital Therapy of the Blagoveshchensk MI and the Department of Anesthesiology of the Clinical Hospital of the Amur Oblast.)

Quoted by title only.

219. Popovskii, M., Sud'ba doktora Khavkina (predislovie S. S. Sokkheia) (The Fate of Dr. Khavkina, with a preface by S.S. Sokkheia).

Quoted by title in Sov. zdrav. 22 (1963) 6: 75.

220. MacDonald, G. (London), Natural foci of infection. Med. paraz. 32 (1963) 3:274-280.

This article, to which an adequate English summary is appended, can be quoted by title only.

221. Fastovskaia, E. I. et al., The influence of the landscape on the incidence of tick-borne encephalitis in the Krasnoiarsk Krai. Med. paraz. 32 (1963) 3:280-283. (From the Department of Epidemiology and the Department of Entomology of the E. I. Martsinovskii Institute of Medical Parasitology and Tropical Medicine, MI, USSR.)

The results of this study, based upon observations from an airplane do not lend themselves to the purpose of a brief review.

222. Lutta, A. S., Ecological-geographical peculiarities of the focus of tick-borne encephalitis in Karelia. Med. paraz. 32 (1963) 3:280-283.

(From the Institute of Biology of the Karelian Branch, AS, USSR.)

The main conclusions of the author were that

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1. In southern Karelia there exists an endemic focus of tick-borne encephalitis, situated in the central sub-zone of the taiga zone.

2. Tick-borne encephalitis occurs in the focus in a mosaic-like manner, due to a number of factors which strictly delimit the distribution and multiplication of the tick-vectors of the infection.

3. A marked influence is exerted on the internal structure of the focus by the peculiarities of the distribution of the tick species I. ricinus and I. persulcatus.

4. Out of the two types of tick-borne encephalitis met with in Karelia the two-wave form is met with in the raions of the occurrence of Ixodes ricinus, i. e. in the southwestern part of the area, the spring-summer type in its southeastern part, where I. persulcatus abounds. Both types of the disease occur in the central part of the focus.

223. Pchelkina, A. A. et al., Territorial distribution and changes in the frequency of virus-infected ticks in the natural focus of tick-borne encephalitis situated in the south of the Kirov Oblast. Med. parazit. 32 (1963) 3:288-292.
(From the Department of Diseases with Natural Foci of the Gamaleia IEM, AMS, USSR.)

The results of this ecological study cannot be briefly summarized.

224. Karpov, S. P. et al., Problems of sanitating a natural focus of tick-borne encephalitis in an inhabited area. Med. parazit. 32 (1963) 3:292-296.
(From the Tomsk SRI for Vaccines and Sera.)

The observations of the authors showed that the incidence of tick-borne encephalitis in the population of towns situated within natural foci of this infection can be considerably reduced by dusting a belt 6-8 km wide round the settlements from airplanes with DDT.

225. Shilova, S. A., On the possibility of forecasting the incidence of tick-borne encephalitis. Med. parazit. 32 (1963) 3:296-302.
(From the Central SR Disinfection Institute.)

The conclusions, which alone can be quoted here, reached in this well documented article were that

1. An analysis of the observations made during many years in natural foci of tick-borne encephalitis led to the detection of signs, with whose aid it is possible to forecast the epizootological and epidemiological situation in these localities.

2. The seriousness of the epizootological situation in the foci changes from year to year and is mainly determined by oscillations of the frequency of the small forest-inhabiting mammals, the principal hosts of the early developmental phases of the ticks. Most dangerous are the years of migration of the animals. During the two seasons following such years one observes an increase in the frequency and infection-rate of the ticks, factors which may lead to an increased incidence of the disease in man.

226. Kadatskaia, K. P. and Shashnikova, N. V., Observations on the ecology of the tick Alectorobius alactagalis in Azerbaidzhan in connection with its epidemiological importance. Med. parazit. 32 (1963) 3:320-323.
(From the Azerbaidzhan Anti-Plague Station.)

The authors stated inter alia that

"Recently considerable attention was paid to the problem of a possible role of argasid ticks in the epizootology of plague. T. A. Burlachenko (1957 - see Trudy Trukmenskoi protivochumnoi stantsii 1 [1958], p. 171) established that in some specimens of Alectorobius tartakovskyi plague bacilli may remain alive for 171 days, whereas most ticks of this species become free from these organisms during the first month. The author postulated that these ticks were of importance for the spread of the infection only during the acute phase of the epizootics.

In April 1956 a plague culture was isolated for the first time in Azerbaidzhan from Alectorobius alactagalis (I. A. Murvatov, Trudy Azerb. protivochumnoi stantsii, Installment 1 [1956] p. 250). The ticks were collected from the burrows of red-tailed gerbils within a territory with epizootics."

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The authors stated, however, in the conclusion to their article that no further observations in point had been made.

227. Roslavitseva, S. A. and Mandel'baum, IA. A., Promising insecticides of the organophosphorus group. Med. paraz. 32 (1963) 3:338-340.
(From the Toxicological Laboratory of the All-Soviet SR Institute of Chemical Substances for Plant Protection.)

This report can be quoted by title only.

228. Miasnikov, IU. A. et al., A focus of tick-borne encephalitis in the oak-groves of the Tula Oblast. Med. paraz. 32 (1963) 3:354-355. Summary.
(From the Tula and Suvorov Sanitary-Epidemiological Stations.)

This brief note refers to a familial outbreak of tick-borne encephalitis due presumably to the abundance of Ixodes ricinus. The diagnosis was confirmed through examination of the sera of the patients.

229. Entin, IA. S. et al., Modernized disinfection and disinsectization unit of the "Serna-3" type. Med. paraz. 32 (1963) 3:356-358.

This well illustrated article can be quoted only by title.

230. List of important articles quoted in a reference list published in the journal Meditsinskaia parazitologiya 32 (1963) 3:364-371.

Fleas

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- 3) Kozlovskaja, O. L. and Chernykh, P. A., Behavior of ectoparasites after death of their hosts. Ibidem, pp. 153-155.

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- 5) Kunitskii, V. N. and Kunitskaia, N. T., A new flea species-- Ceratophyllus miculini from Transcaucasia. Ibidem, pp. 203-205.
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Ticks

- 14) Gorchakovskaia, N. N. and Chikhin, S. P., Contribution to the problem of the importance of birds in the foci of tick-borne encephalitis in connection with the tasks of

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- 17) Ustinov, S. K., Contribution to a study of the role of the large mammals in the nutrition and distribution of forest ticks in the territory of a primary focus of tick-borne encephalitis. Ibidem, pp. 20-21.
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232. List of Important Articles Published in Doklady Irkutskogo Protivochumnogo instituta, Installment 4 (1962):

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233. Balabkin, A. K. et al., The natural plague focus in the Gorny Altai. Pp. 3-5.

Most numerous among the 12 rodent species met with in the Gorny Altai area are the Altai marmot, the long-tailed suslik (sisel), Ochotona mongolica and Microtus gregalis. The area inhabited by the first mentioned rodent is over 400,000 hectares large, and up to 210-230 of its burrows may be present per square kilometer. Most noteworthy among the 32 flea species met with in the region are the following:

<u>Flea Species</u>	<u>Hosts</u>
<u>Oropsylla silantievi</u>	Marmot
<u>Citellophilus tesquorum</u> and <u>Oropsylla asiatica</u>	Suslik
<u>Amphalius runatus</u> and <u>Ctenopsyllus hirticrus</u>	<u>Ochotona</u>
<u>Amphipsylla primaris</u> <u>primaris</u>	<u>Microtus gregalis</u>
<u>Paradoxopsyllus</u> <u>skorodumovi</u>	Met with on many rodents in autumn

Twelve of the flea species have been found plague-infected and some of them were found capable to act as vectors of the infection (see Rall, 1960;¹ Zhovtyi and Emel'ianova, 1959;² Vasil'ev and Gorbacheva, 1961³).

During an epizootic observed in June 1961 and 2 localities 8 km southwest of the town Tashanty, Kosh-Agachskii Raion, plague bacilli could be isolated from Ochotona mongolica,* the long-tailed suslik* and the steppe polecat as well as from the fleas A. primaris*, Ch. homoeus* (both collected from steppe polecata); P. skorodumovi*, A. runatus* and Frontopsylla hetera* collected from C. mongolica.

While typical in all other respects these plague strains were found capable of fermenting rhamnose within 1-2 days.

* Found for the first time plague-infected in the Soviet Union.

Though in the opinion of the authors this plague focus had been in existence for a long time, its earlier detection was impeded by the slow development of the epizootics, their limitation to circumscribed areas and also on account of insufficient observations. Human plague manifestations remained absent because the area, used as pasture ground for the cattle in winter, is entered by man only at the time when the rodents are hibernating.

As the authors postulated, the marmots formed the main reservoir of the infection. The absence of positive findings in them was due to limited possibilities for their examination.

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234. Timofeeva, L. A., Contribution to the methods of isolating plague bacilli. Pp. 10-11.

In a previous paper, entitled "On the isolation of plague cultures from trapped rodents," published in Installment 1 of the Doklady (1961) the author had shown that positive results could be obtained most often when suspensions of the internal organs and lymph nodes of the animals were used for cultivation. In the present paper she deals with analogous observations in white mice and guinea-pigs which had been experimentally infected with the weakly virulent plague cultures recently isolated in Transbaikalia.

The author used for this purpose subcultures of the strains 420, 580, 798, 263 and 803, which were subcutaneously injected into the test animals in sub-lethal doses ranging from 10,000 to 100,000 organisms. The animals were killed with chloroform 2-10 days after infection and cultivation were made from them by (1) Impressing their cut organs on the plates and distributing the material with the aid of a loop; (2) Rubbing the organs and lymph nodes on the plates; and (3) Using suspensions from their organs and lymph nodes for the insemination of the plates.

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Examining materials from 178 white mice and 71 guinea-pigs, the author obtained the following results (total of positive cultivations 41.3%):

<u>Material</u>	<u>Percentage of Positives</u>	<u>Material</u>	<u>Percentage of Positives</u>
Suspensions	37.3%	Rubbing in of liver	5.6%
Rubbing in of the para-aortal lymph nodes	31.3%	Dto. of lung	1.6%
Dto. of spleen	14.8%	Impression of spleen	4.0%
Dto. of groin lymph node	10.0%	Dto. of liver	0.8%

In rare cases the cultivations made with the suspensions of the organs and lymph nodes gave a negative results while those made from the para-aortal lymph nodes or the spleen or liver proved positive.

For practical purposes the author recommended to use for the examination of each specimen two plates, one of which served for making cultures from the suspensions of the organs and lymph nodes, while separate sectors of the other were implanted with material from (a) the para-aortal and groin lymph nodes; (b) the liver; (c) the spleen.

235. Timofeeva, L. A. et al., The formation of hydrogen sulfide by growths of plague and pseudotuberculosis bacilli. Pp. 11-14.

Contrary to the generally accepted opinion, but in agreement with the opinion of Tumanskii (Mikrobiologiya chumy, 1958), the authors found that plague and pseudotuberculosis bacilli were capable of producing hydrogen sulfide if cultivated either in Hottinger's broth (pH 7.2) with an amino-acid concentration of 150 mg %, prepared from hydrolysates with a profound cleavage of the protein molecules (60-70%), or in broth containing 0.1% cysteine.

236. Aparin, G. P., Contribution to the problem of the importance of the susceptibility of the rodents for the occurrence of plague in the natural foci. Pp. 14-16.

As pointed out in the introduction to this brief note, diametrically different opinions are held by various observers regarding the degree of the susceptibility of the rodent hosts favorable for the persistence of plague in a given area. While some writers consider a high susceptibility of the rodents as indispensable for the perpetuation of the infection, others maintain that plague can persist only in species more or less resistant to it. The latter view was recently propounded by N. F. Nekipelov (1959) who, studying the plague susceptibility of the various rodent species in Mongolia and Transbaikalia, came to the conclusion that the infection can be perpetuated only by species which are 10-10,000 times more resistant to it than the guinea-pigs.

The present author insisted with much reason that one must distinguish in this respect between hibernating and not hibernating rodent species. Among the former a perpetuation of plague is possible in any case on account of the seasonal variations of their susceptibility to the infection. The increased resistance of the animals during the hibernation period leads to the occurrence of protracted forms of the disease which are apt to flare up into a generalized type of infection when the animals awake in spring.

Dealing recently with the perpetuation of plague in non-hibernating rodents, L. S. Malafeeva (1960) postulated that susceptible and not susceptible individuals coexist within one and the same rodent species, the former being capable of carrying over the infection while the latter form the fuel for the appearance of epizootics. Baltazard (1959, 1960) on the contrary was of the opinion that such different roles were played not by individual rodents but by different species. In the opinion of Aparin both these mechanisms might be at work. The possible role of the rodent fleas in the perpetuation of plague should not be disregarded.

As Aparin finally pointed out, it was most necessary to evaluate the possible importance of the weakly virulent plague strains recently isolated in the Soviet Union under natural conditions for the perpetuation of the infection. He quoted in this connection an article by Kraminskii and Domaradskii populations only plague strains producing non-fatal infections were capable of survival.

(Regrettably no reference list is attached to this article.)

237. Timofeeva, L. A. and Aparin, G. P., To the characterization of the plague strains isolated in Transbaikalia in 1960 and 1961. Pp. 5-10.

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This important article must be studied in the original or in a full translation.

238. Smirnov, V. P., Survival of plague bacilli on the skins of wild rodents. Pp. 17-20.

In order to study the length of survival of plague bacilli on the detached skins of wild rodents, the author subcutaneously infected 54 marmots and 176 susliks (sisels) with P. pestis and kept the detached skins of those of the animals which succumbed to a generalized infection in a box. At various intervals of time material from the inner side of the skins was cut off, minced and triturated and then used for the subcutaneous infection of guinea-pigs. It was found that under these circumstances the plague bacilli could survive for periods of up to 20 days.

In view of these findings the author stressed the necessity of disinfecting as well disinsecting the skins of wild rodents obtained from plague foci.

239. Timofeeva, L. A. et al., Dry nutrient media for the diagnosis of plague and some other infections occurring in natural foci. Pp. 20-22.

The authors found that dry nutrient media, for the preparation of which brief directions are given, were fully suitable for field work.

240. Smirnov, V. P. et al., Observations on the innocuousness and reactivity of the conjunctival and subcutaneous-conjunctival methods of anti-plague vaccination. Pp. 23-25.

In order to prove the innocuousness of the conjunctival method of plague vaccination and that of a combined immunization by the conjunctival and subcutaneous routes, the authors first used the former method on over 1,000 guinea-pigs. Moreover the senior author several times during a period of two years instilled the live EV vaccine in doses of 1, 1.5 or 4 billion organisms into his eye. This procedure led to the appearance of a slight cold in the head 4 hours after the vaccination, then after 9 hours to slight itching in the eyes. Both these signs disappeared within one day. 12 hours after the immunization a slight conjunctivitis became manifest which lasted for two days. A slight cough, lasting for the same length of time, appeared at the end of the first day after the vaccination.

Under these circumstances it seemed justified to use the method of conjunctival vaccination against plague first in a group of volunteers and then in 791 hunters and their families living in plague-enzootic raions. The dose for adults was 1.5 billion organisms; children under 10 years received one quarter of this, those from 11-16 half an adult dose. The reactions following the vaccination were analogous to those described above.

The method of combined conjunctival and subcutaneous vaccination was also first tried in guinea-pigs which received 1.5 billion doses of the EV strain by each of these routes. A part of the immunized animals was challenged by the intra-tracheal route with 10 to 250 DLM of a virulent plague strain--apparently with good success. After further tests on volunteers 1.5 billion doses each were used to immunize 9,927 persons living in plague-enzootic foci with acute manifestations of the infection in the tarabagans simultaneously by the conjunctival and subcutaneous routes. 7,371 of these immunized persons showed a slight rise of the body temperature, 352 slight fever, 4,875 slight conjunctivitis and 5,070 slight cough.

At the end of their article the authors briefly stated that

"In the persons vaccinated conjunctivally or by the combined method one could note a higher epidemiological efficacy than in those immunized only by the subcutaneous route."

The authors suggested that practical use ought to be made of their methods of vaccination at times when acute epizootics were present in the plague foci.

241. Smirnov, V. P., Observations on the virulence of a plague strain passed through an immune organism. Pp. 25-27.

The strain dealt with in this paper had been isolated from the eighth victim of a small pneumonic outbreak (total 10 cases) occurring in 1948 in the Uburkhangaiskii Aimak (district) of the Mongolian People's Republic. Its DLM, equalling 10 organisms, remained unchanged after passages through guinea-pigs.

As discussed already in a previous review (see Abstract No. 164), Smirnov used this strain to test the immunity engendered in him through combined vaccination by the conjunctival and subcutaneous routes. As has been described, he had a slight attack of bubonic plague. The plague cultures which could be isolated only from the ulcer developing at the site of infection, possessed the same virulence as the strain used for challenge.

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242. Domaradskii, I. V. et al., Correlation between the fibrinolytic activity of P. pestis and its ability to coagulate plasma. Pp. 27-29.

As has been recorded by several authors (Madison, 1936; Kwashina, 1941; Domaradskii and IAromiuk, 1960; IAromiuk, 1961), P. pestis is capable of lysing the fibrin of human and animal blood. On the other hand Jawetz and Meyer (1944) found this organism able to coagulate the plasma of rabbits and analogous results were obtained with human plasma by Eisler (1961).

Inasmuch as both these activities were directed against the same substratum, the present authors explored whether a correlation existed between them. At the same time they wished to establish whether the pseudotuberculosis bacillus, which showed no fibrinolytic activity, could coagulate plasma.

For their tests with plasma the authors used suspensions of P. pestis strains grown for 48 hours at 28°C and pseudotuberculosis strains grown at the same temperature and at 37°C. 0.1 ml amounts of the suspensions were placed into small test tubes and 0.5 ml amounts of rabbit, human or guinea-pig plasma were added. The tubes were incubated at 37°C and kept under observation for 48 hours. Control tests were made with plasma alone and with a Staph. aureus strain known to give positive reactions.

Lyophilized cattle fibrinogen was used as substratum for the fibrinolysis tests made according to the method of IAromiuk and Vasiukhina (1962), in regard to which the authors gave neither details nor a reference.

While 116 plague strains which produced fibrinolysis were invariably also capable of coagulating rabbit plasma, all not fibrinolytic strains of P. pestis (57) gave a negative result in the latter respect as well. Only 25 of the fibrinolytic strains gave a positive result with human plasma and 27 with guinea-pig plasma.

In agreement with the statements of Jawetz and Meyer and of Eisler no correlation could be found between the capability of the strains to coagulate plasma and their virulence.

Since all 58 pseudotuberculosis strains tested failed to coagulate plasma, the authors thought that this feature might be useful for a differentiation of this bacterial species from P. pestis.

243. Kolesnik, V. S. and Domaradskii, I. V., Sensitivity of white mice and white rats to the repeated administration of small doses of plague toxin. Pp. 29-35.

Though in all plague-susceptible animals signs of intoxication are conspicuous both clinically and at autopsy, it is known that many of the species concerned are little susceptible to the administration of plague toxin (Kratinov, 1957). So far it has not been possible to find an explanation for this discrepancy. V. V. Donskov (1944) postulated that the comparatively weak action of the plague toxin is overcompensated by its production in large amounts due to the intense multiplication of P. pestis in the infected animals.

"Also," the author continued, "one might assume that the intense intoxication in plague, disproportionate to the power of the toxin, stands in relation to the development of the so-called 'paradoxal sensitivity' of the body, brought about according to some authors (Zdradovskii, 1950; Morgunov and Khatuntsev, 1954) by a 'summation of irritation' including such of a toxic-infectious nature."

For a study of this hypothesis the authors made a series of experiments in white mice and one experiment in white rats. They used for this purpose a plague toxin prepared from the vaccinal plague strain 1 according to the method of Baker and his associates, which as a rule was administered intravenously or subcutaneously in doses more or less near to the DL₅₀; sometimes doses near the DCL were used. To a second group of animals the same amounts of the toxin were administered in fractionate at intervals ranging from 30 minutes to 12 hours. For the purposes of comparison some series of white mice were intravenously injected with cholera toxin.

Summarizing the results of these tests, the authors stated that

"An analysis of the findings made (see tables 1 and 2) shows a clear regularity in the case of the plague toxin: if this is used in fractionate doses, regardless of the mode of its administration and the intervals between its introduction, the mortality of the animals is considerably below that of the animals given the whole dose at once. The fractionate use of cholera toxin shows another type of regularity: if the intervals between the fractionate administrations are short

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(50 minutes), the mortality of the animals is considerably in excess of that caused by the administration of the whole toxin dose at one and the same time; on the contrary, if the intervals between the administrations of the fractionate doses are longer (3 hours), the mortality is considerably decreased, falling below that following the use of the whole toxin dose at one and the same time.

One may conclude from these findings that the test animals tolerate a fractionate administration of the plague toxin better than the administration of the whole dose at once; their mortality decreases hand in hand with a prolongation of the intervals between the introduction of the fractionate doses.

Thus the phenomenon of a 'paradoxal sensitivity,' found present by some observers in regard to some exotoxins (tetanus, diphtheria, botulismus) was not manifest in the case of the plague toxin under the conditions of our experiments."

This phenomenon could be observed in the case of the cholera toxin, but only as long as the intervals between the administrations of the fractionate doses were short. When these intervals were long, the cholera toxin acted in manner similar to that of the plague toxin.

The authors came to the conclusion that, as far as the results of the fractionate administration were concerned, the plague toxin and, to a lesser degree, also the cholera toxin behaved in a manner different from that of the exotoxins.

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Donskov, V. V., Role of the reticulo-endothelial system in the pathology of bubonic plague. Izv. Irkutsk... 5 (1944).

Zdrodovskii, P. F., The problem of reactivity in the study of infection and immunity. Medgiz, Moscow, 1950.

Kratinov, A. G., Comparative sensitivity of some rodent species to P. pestis and its toxin. Tezisy nauchn.

konf. po prirodnoi oshagovosti i epidem. osobo opanykh
infekts. zabolevanii, 25/I-2/II, 1957. Saratov.

Morgunov, I. N. and Khatuntsev, V. V., The importance of the immunological specificity for the phenomenon of the paradoxal sensitivity to toxins. Biul. eksp. biol. 37 (1954) No. 3.

244. Klimova, I. M., Aldolase activity of the proteins of P. pestis. Pp. 35-37.

In the course of a study of the influence of the plague toxin on the aldolase activity of the serum and the liver of test animals the author found that the Fraction II of P. pestis, isolated according to the method of Baker et al. and used as toxin, exerted itself a marked aldolase activity. This was in accord with the findings of Srikanth et al. (1958). In view of these observations it seemed important to establish whether the toxicity of the Fraction II was related to the aldolase activity.

For this purpose the author worked with various fractions obtained from the plague strains 1, 17 and EV with the aid of Baker's method and also with such obtained through treatment of the organisms with urea (Domaradskii et al., 1961).

The aldolase activity was determined according to the method of Sibley and Lehninger (1949), as modified by Korzunova (1950). The LD₅₀ of the toxin was assessed in white mice with the aid of intraperitoneal injection.

Summarizing the results of the above outlines investigations, the author stated that

"the absence of an aldolase activity in extracts obtained through treatment with urea renders it possible to conclude that the toxic manifestations of P. pestis are not related to the aldolase activity."

References

Domaradskii, I. V. et al., A new method for obtaining toxic, immunogenic and fibrinolytic active fractions of the plague bacillus. Doklady Irkutsk. protivochumn. inst. 2 (1961).

Korzunova, E. P., Contribution to the problem of the methods for the determination of aldolase and the means of expressing its activity. Laboratornoe delo (1960) 3.

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Sibley, I. and Lehninger, A., J. Biol. Chem. 177 (1949): 859.

Srikatan, T. et al., Indian J. Med. Res. 46 (1958): 1.

245. Klimova, I. M., Influence of the plague toxin on the aldolase activity in the liver and blood serum of animals. Pp. 37-39.

The author stated that

"In the present paper we studied the influence of the plague toxin (Fraction II of Baker) on the aldolase activity in the liver and blood serum in healthy white mice and guinea-pigs and in such intoxicated with the toxin. Together with this we studied the action of the toxin on the aldolase activity in the liver white mice in vitro. Inasmuch as preliminary investigations had established that the Fraction II, ordinarily used as toxin, has itself a marked aldolase activity, we used for the in vitro tests the water-soluble extract of P. pestis obtained through urea extraction (Domaradskii et al., 1961).

As our findings showed, one can observe in the liver and serum of white mice 17 hours after the administration of an LD₅₀ dose of plague toxin an increase of the aldolase activity. The aldolase activity of the liver increases 70%, that of the serum 74%. It was not possible to establish an influence of the plague toxin on the aldolase activity in guinea-pigs. In vitro the toxic extract did not exert an action of the ferment."

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Dzhaparidze, M. N. and Sidorova, N. K., Study of the peculiarities of the metabolism in plague with the aid of fluoroacetate. Vop. med. khim. (1960) No. 1.

Domaradskii, I. V. et al., Influence of the plague toxin on the phosphorus metabolism in the liver. Vop. med. khim. (1961) No. 2.

Idem: A new method for obtaining toxic, immunogenic and fibrinolytic active fractions of P. pestis. Dokl. Irkutsk. prot.-chumn. inst. (1961) No. 2.

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Kratinov, A. G. and Khar'kova, N. M., On some disturbances of the carbohydrate metabolism in plague intoxication. Vop. med. khim. (1960) No. 6.

Ajl, S. et al., J. Bact. 75 (1958): 449.

Schär, M. and Meyer, K. F., Schweiz Z. allg. Path. und Bact. 19 (1956): 51.

246. Borsuk, G. I., Role of humoral factors in the mechanism of the transformation of the phagocytic reactivity in plague immunity. Pp. 39-41.

For a study of the opsonic properties of the plasma white mice were used which had been vaccinated with 100 million doses of P. pestis vaccine. 25-30 days after the immunization the animals were decapitated and bled. Their blood was centrifuged for 30 minutes at 3,000 revolutions and the leucocytic layer was washed three times with normal saline before the cells were used for the tests. Leucocytes of not immunized animals were used for control tests.

The main conclusion reached by the author of this note, the contents of which do not lend themselves to the purposes of a brief analysis, was that in the process of immunogenesis a functional transformation of the neutrophils takes place while the monocytes do not undergo a corresponding transformation.

247. Borsuk, G. I., Determination of the efficacy of anti-plague immunization with the aid of the phagocytic reaction. Pp. 41-43.

Korobkova and Vlasova (1961) had shown a parallelism between the resistance of animals against plague and the degree of completeness of the phagocytic reaction. They studied the degree of this reaction according to the method of Berman and Slavskaja (1958, 1959) in white mice which had been immunized against plague 32-40 days previously. Then the animals were infected with plague and a comparison was made of the features of the phagocytic reaction in the animals which had withstood challenge and those which had succumbed at various intervals. It was found that most often the animals which manifested an incomplete phagocytic reaction succumbed.

On account of these findings the present author used the phagocytic reaction for a study of the efficacy of

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anti-plague vaccination in man. The completeness of the phagocytic reaction was determined in workers of the Irkutsk Anti-Plague Institute at different intervals after their immunization against plague, while never immunized students of Irkutsk University served as controls.

These observations showed that the changes in the phagocytic reactions taking place after plague immunization were identical in the mice and in man. In both on the 6th-17th day after vaccination a large percentage of leucocytes was found in which a multiplication of the microbes took place (incomplete phagocytic reaction). This reaction became complete on the 25th-30th day after immunization, but on the 60th day after vaccination and later again incomplete reactions were found. Since, in the opinion of the author, the presence of incomplete phagocytic reactions indicated a low level of immunity, he postulated that most likely the immunity conferred by the EV-NIEG plague vaccine was comparatively shortlived.

References

Berman, V. M. and Slavskaya, E. M., Complete phagocytosis. Report I. A new methodological principle for the study of the complete phagocytic reaction. Zh. mikrobiol. (1958) No. 3.

Idem: "The reaction of complete phagocytosis." In: Sovremennye problemy immunologii (Contemporary Problems of Immunology). Leningrad, 1959.

248. Korobkov, G. G., Contribution to the problem of plague intoxication. Report I. Pp. 43-46.

The contents of this brief note do not lend themselves to a further condensation.

249. Korobkov, G. G. et al., Contribution to the problem of plague intoxication. Report II. Pp. 46-47.

Commenting upon their briefly described observations on white rats intraperitoneally injected with Baker's Fraction II, the authors stated that

"All these data - the drop of the blood pressure, hemoconcentration, decrease of the prothrombin index, the decrease of the number of leucocytes - indicate that under the influence of the

plague toxin there develops in the animals a shock similar to the anaphylactic, hemo-transfusion, peptone and other shocks.

Evidently this shock develops as the result of a nervous-reflectory reaction, resulting from a disturbance of the fermentative systems of the body. Such a shock indicates an unspecific reaction of the body which may develop under the action of most different excessively strong irritants.

There is reason to assume that the specific reaction to the toxin is observed only during the early period (after infection); then on this reaction are superimposed disturbances of the hemodynamics and dystrophic changes, in which it is impossible to detect specific features of the action of the toxin on the body of the animals."

250. Zhovtyi, I. F. et al., Contribution to the study of the birds in the natural foci of infectious diseases. Pp. 101-103.

The authors of this article stated inter alia that

"In the plague foci, where the birds themselves do not act as carriers of the infection, they serve as feeders of the arthropod vectors of the infection, the fleas and ticks. On the birds of the Transbaikalian plague focus were found 12 species of fleas, among them 9 species of rodent fleas (Dubinin, 1949), including plague vectors like Pulex irritans, O. silantiewi, Nosopsyllus tesquorum sungaris, Am. runatus, F. luculenta luculenta, Am. primaris mitis. Most often found on the birds is the tarabagan flea O. silantiewi, considered as the main plague vector in Transbaikalia and Mongolia. From rodent fleas (Nopsylla setosa) collected from a black kite in Daghestan plague bacilli were isolated (Gusev, 1959). The possibility of a plague infection of rodents through bird fleas has been experimentally demonstrated. A proventricular plug formed in F. frontalis on the 16th-50th day, in C. avicitelli on the 7th-29th day. The blocked fleas survived for 3-6 days (Bibikova et al., 1956). The transport

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of suslik fleas by pigeons for distances of up to 10 km has been experimentally demonstrated (Shiranovich and Chumakova, 1961). However, it seems that an importation of fleas may take place over distances of up to 250 km (Gusev and Bednyi, 1960).

Also found on the birds of Transbaikalia were ticks of the species Ixodes crenulatus (Dubinin, 1948), a tick repeatedly found plague-infected (Emel'ianova, 1959), and of the species Dermacentos nuttalli."

(No list of references is included.)

251. Nekipcelov, N. V., The importance of the long-tailed suslik as a plague carrier. Pp. 116-119.

As stated by the author, owing to the gradual extinction of the tarabagans in Western Mongolia, during recent years the long-tailed susliks (Citellus undulatus) had gained in importance as a plague reservoir. Further studies of this species and of the methods of fighting it are therefore indispensable.

252. Ol'kova, N. V., Ecological peculiarities of the long-tailed susliks and their relation to the epidemiological and economical importance of this species. Pp. 120-127.

Referring in this well documented study to the subject of plague, the author stressed that the susceptibility of the long-tailed suslik to this infection is subject to marked seasonal variations, highest in spring and summer, when acute forms of the disease are frequent, and becoming low in autumn, during which protracted infections, terminating in recovery, prevail. In the opinion of the author the seasonal changes in the plague susceptibility of the long-tailed suslik are due to the interaction of many ecological-physiological factors, most important among which are the state of nutrition, the body temperature and the degree of excitability of the nervous system.

The author added, without giving details or an exact reference, that four plague outbreaks due to contact with the long-tailed susliks had been recorded by Smirnov (1961) in the Mongolian People's Republic.

253. Nekipelov, N. V., Observations on the dimensions of mammals and birds and the epizootological importance of this factor. Pp. 106-116.

The author postulates that observations on the size of the individuals composing a species of wild-living animals are of practical importance because, as shown by Ol'kova for instance (see Abstract No. 252), unfavorable environmental conditions render the animals susceptible to infections and, on the other hand, favorable environmental conditions lead to an increase of the size of the individuals.

254. Zhovtyi, I. F. and Vasil'ev, G. I., Temperature conditions for the presence of fleas in the furs of rodents. Pp. 152-156.

Discussing their results, the authors stated that

"All data recorded above show quite convincingly that the fleas live on the body of the rodents under special microclimatic conditions and are not under the influence of the temperature of the not immediate parts of the extrinsic air. The temperature of the layer of the extrinsic air immediately above the ground is of importance for the fleas only if they leave their host outside its burrow. Under natural conditions only an insignificant part of the flea population lives away from the latter or from the body of the host, literally only single specimens."

255. Idem: Observations on the self-liberation of the rodents from their fleas. Pp. 156-160.

The authors conclude their article, the details of which do not lend themselves to the purpose of a brief review, by stating that

"We could never observe that the rodents searched for fleas away from their furs, e. g. in the litter of their nests, and devoured them. Evidently these insects are of no interest for the rodents as an article of their diet and they destroy them merely in self-defense."

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256. Moskalenko, V. V., Observations on the ability of hungry fleas to imbibe the blood of rodents. Pp. 184-187.

As a result of his observations the author refuted the idea of a strict tendency of the fleas to feed only on the rodents of certain species. For

"Not one of the fleas under observation, if hungry, refused to suck the blood of the animal species offered it for this purpose, though there were differences in the character of the feeding. This widely increases the potential role played by the fleas of the Primor'ie in the transmission of the causative organisms of infectious diseases."

257. Ol'kova, N. V., Study of the various methods for the fight against long-tailed susliks. Pp. 192-195.

The author obtained best results by gassing the burrows of the rodents with the Soviet-produced hydrocyanic acid compound "cyanplav" (tsianplav). Next in efficacy was the method of the distribution of zinc phosphide baits in early spring before the growth of the vegetation started. The administration of chloropicrin took the third place.

Since the method of baiting was cheapest as well as simple, it appeared most acceptable for practical purposes.

258. Lavrinenko, A. E. et al., Rat destruction with carbon monoxide in a large refrigeration plant. Pp. 197-202.

The results of the work described in this article was so satisfactory that the author advocated the large-scale use of carbon monoxide for the purpose of rat destruction.

259. Novikova, O. A., Contribution to the study of the epidemiology of tularemia in the Irkutsk Oblast. Pp. 48-50.

Dealing with the past history of tularemia in the Irkutsk Oblast, the author stated that (a) Klets (1957) referred to a vector-borne outbreak taking place in 1937 in the Nizhne-Udinsk Raion; (b) Altareva and Potapova (1958) met with instances of human tularemia in the Nizhne-Ilinsk Raion in 1951; and (c) Antsiferov and Potapova (1958) isolated in 1953 tularemia cultures from a water-rat and from the tick D. silvarum in the Bratskii Raion.

The present author, who in 1958-1959 made 2,160 intracutaneous tularin tests in inhabitants of 6 raions, obtained positive results in 70 persons who had never been vaccinated against tularemia but had had contact with water-rats, muskrat or hares or with their skins. Some of the reactors gave a history of past lymphadenitis or tonsillitis attacks. In the course of his work the author also found three hunters in the Nizhne-Ilinsk Raion who had acute attacks of tularemia (1959). However, examinations of 561 rodents and 219 ticks gave a negative result.

The author recommended the use of tularemia vaccination and a strict control of the hunting of the above mentioned animals in the oblast.

References

Klets, E. I., A tularemia outbreak in Nizhne-Udinsk. Izv. Irkutsk... 15 (1957).

Antsiferov, M. I., Altareva, N. D. and Potapova, E. P., "Tularemia in Eastern Siberia." In the collection: Prirodnookhagovye zabolevaniia. Trudy nauchn. konf. Min. Zdrav. SSSR 7 (1958), Moscow.

260. Brikman, D. I., To the problem of the importance of hares in the epidemiology of tularemia in Iakutia. Pp. 50-51.

To judge from the number of the collected skins, which varies in the different years from tens of thousands to 2-3 millions annually, the frequency of Lepus timidus, the only species met with in Iakutia, is subject to enormous oscillations. So far these hares have not been found tularemia-affected, but they have been insufficiently examined and instances are on record in which contact with them has caused the appearance of the disease in man.

The potential importance of the hares in the epidemiology of tularemia in Iakutia is great, because these animals would be apt to spread the infection over long distances and also because ticks are practically absent in the area.

261. Zykina, N. A. and Kir'ianov, G. I., Instances of tularemia in horses. Pp. 52-55.

The authors recorded two instances of tularemia in horses which were obviously infected through the consumption

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of oats which had been contaminated by mice. One of the two animals succumbed to the infection; the diagnosis was bacteriologically confirmed in both. It is interesting that the two drivers of the horses, apparently infected through the dust of the contaminated oats, fell ill with tularemia before the disease became manifest in the horses.
(Krasnogorski Raion of the Altai region.)

The following articles are quoted by title only:

262. Pinigin, A. F. and Chuvalova, V. I., To the epidemiology of brucellosis in the Irkutsk Oblast. Pp. 55-57.
263. Pinigin, A. F., The reservoir of brucellosis in the Irkutsk Oblast. Pp. 57-60.
264. Sorkin, IU. I. and Merinov, S. P., Some data on brucellosis in the Kamchatka Oblast. Pp. 60-63.
265. Padalko, Z. F. and Doronina, K. P., Role of the various animal species in the epidemiology of brucellosis in the Primorski Krai. Pp. 63-70.
266. Pinigin, A. F. and Petukhova, O. S., Contribution to the problem of the therapeutic brucellosis vaccine. Pp. 70-72.
267. Feoktistov, G. I. and Markevich, A. A., Preliminary results of a study of the therapeutic action of a vaccine prepared from the Br. rangifers strain. Pp. 72-74.
268. Feoktistov, A. Z., The reaction of complement fixation inhibition in sheep. Pp. 74-78.
269. Noskova, L. I., Dry casein medium for the growth of V. cholerae. Pp. 78-81.
270. Efremova, M. F. and Kolesnik, R. S., The use of chicken egg-yolk for the biological control of bacterial anti-cholera preparations. Pp. 81-86.
271. Karakashly, Z. K. et al., Materials to the investigation of the Khiloksk Raion of the Chita Oblast for the presence of diseases occurring in natural foci. Pp. 87-92.
272. IAgodinski, V. N., To the problem of the epidemiology of cases of tick-borne encephalitis with an unknown route of infection. Pp. 92-93.

273. IAgodinskii, V. N. and Aleksandrov, IU. V., Seasonal differences in the infectibility of Ixodes persulcatus with the virus of tick-borne encephalitis. Pp. 94-97.
274. Feoktistov, A. Z., Isolation of the tick-borne encephalitis virus from warm-blooded animals in winter. Pp. 97-100.
275. Sotnikova, A. N., Experimental study of the susceptibility of the bird Erythrina rosea to infection with the virus of tick-borne encephalitis. Pp. 100-101.
276. Egorova, L. S., "Mixed epizootic of tularemia and Omsk hemorrhagic fever in the ondatra (musk-rat) in Western Siberia." In: Prirodnouchagovye bolezni. Materialy nauchnoi konferentsii (Diseases with Natural Foci. Work Papers of the Scientific Conference). Tiumen, 1963.
- Quoted by title.
277. Kuzina, A. I., Some peculiarities of tularemia in the Kemerovsk Oblast in comparison with tularemia in the neighboring krajs and oblasts of Western Siberia. Trudy Irkutsk. n.-i. inst. epid. i mikrobiol. Installment 7 (1962): 161-167.

While up to 1953 epidemics of tularemia occurred in some of the raions of the Kemerovsk Oblast, owing to systematic vaccination campaigns and the implementation of other prophylactic measures the number of the affected raions as well as the incidence of the disease became much lowered during the last years. Whereas in 1949 20 raions were involved and the morbidity was 2.7 per 10,000 population, the corresponding figures for 1956 were 3 and 0.03/10,000.

In the Kemerovsk Oblast as well as in the adjacent krajs and oblasts 98% of the human tularemia manifestations were due to a water-borne infection and accordingly the anginose-bubonic form of the disease was prevalent (84%). The author recommends a fight against tularemia through wholesale vaccination, anti-rodent campaigns and health education.

The recent incidence of the disease in the Kemerovsk Oblast and the adjacent regions is shown in the following table:

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<u>Area</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>Total</u>
Altai Krai	141	301	113	79	34	33	55	15	17	52	840
Kemerovsk Oblast	67	62	37	30	9	8	13	5	1	4	236
Krasnoiarsk Krai	15	15	6	18	2	6	1	-	25	4	92
Novosibirsk Oblast	46	38	86	89	30	32	35	41	11	55	463
Tomsk Oblast	84	14	2	5	1	2	-	2	11	26	147

278. Trudy Odesskogo n.-i. instituta epidemiologii i mikrobiologii im I. I. Mechnikova (Transactions of the Odessa I. I. Mechnikov SR, IEM) Volume IV. Virus infections and zoonoses. Odessa, 1960.

The following articles published in this volume are quoted by title:

279. Mikhov, A. P., The precipitin reaction as a method for the accelerated diagnosis of brucellosis, tularemia and also of mixed brucellosis and tularemia infections. Pp. 83-89.
280. Mikhov, A. P., The precipitin reaction as a method for the accelerated diagnosis of anthrax and also of mixed infections (brucellosis and anthrax: brucellosis, tularemia and anthrax). Pp. 91-88.
281. Tatomir, L. G., Materials to the study of the dry tularemia vaccine prepared under the conditions of serial production. Pp. 159-161.
282. Tatomir, L. G., Influence of the length of freezing on the survival of the tularemia bacilli in the dry tularemia vaccine. Pp. 163-164.
283. Goreliuk, G. F., Study of the agglutinability of the tularemia diagnosticum prepared from attenuated strains. Pp. 165-167.
284. Goreliuk, G. F., Study of the allergenic properties of the tularemia diagnosticum prepared from attenuated strains. Pp. 169-170.