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The Institute of Contemporary Russian Studies

Fordham University
Bronx 58, New York

Series II

Selected Abstracts

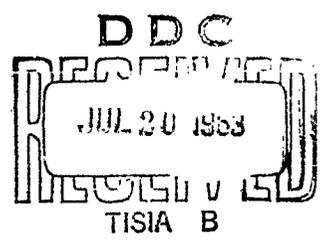
from

Soviet Biomedical Journals

No. 1

Prepared by

Dr. Robert Pollitzer



Contract No.

DA 18-108-405-CML-867(A)

April 1963

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1. Al'tshtein, A. D., Titration of the tick-borne encephalitis virus and of the virus-neutralizing antibodies in cultures of human embryonal fibroblasts with the aid of the interference phenomenon with poliomyelitis virus. Vop. virus. 7 (1962) 5:529-534. (From the Poliomyelitis and Virus Encephalitis Institute, AMS, USSR, Moscow.)

The conclusions reached by the authors of this article, the technical details of which cannot be dealt with here, were that

1. A method of titrating the tick-encephalitis virus and the virus-neutralizing antibodies has been devised.
 2. This method has been found 50 times less sensitive than that of the intracerebral infection of mice, but has the advantages of greater preciseness, clearness and reproducibility.
 3. The method of titrating the virus-neutralizing antibodies through observation of the inhibition of the interference phenomenon is more sensitive than that of titrating the antibodies with the aid of intracerebrally infected mice, is not inferior to that of intraperitoneal infection and gives clear-cut and reproducible results.
2. Andzhaparidze, O. G. et al., The comparative sensitivity of primary cultures from different tissues of pig embryos to the destructive action of the tick-encephalitis virus. Vop. virus. 7 (1962) 5: 534-536. (From the Moscow SRI of Virus Preparations.)

Comparative studies permitted the authors to recommend tissue cultures prepared with the kidney cells of embryos for routine tests to titrate the tick-encephalitis virus and the virus-neutralizing antibodies.
3. Trukhmanov, B. G. and Fedorov, IU. V., The influence of hormones (cortisone and ACTH) on the vaccine-produced immunity against tick-encephalitis in experimental animals. Vop. virus. 7 (1962) 5:537-539. (From the Tomsk SRI for Vaccines and Sera.)

Selected Abstracts-II/2

The two authors found that

1. The use of cortisone during the period of vaccination against tick-borne encephalitis markedly lowers the resistance of the test animals and inhibits the production of specific antibodies.

2. ACTH on the contrary exerts almost no influence on the resistance of the animals and lowers the antibody concentration but slightly.

4. Zalkind, S. IA. et al., Comparative cytological analysis of the influence of the vaccinia virus on the cells of tissue cultures. Vop. virus. 7 (1962) 5: 586-593.
(From the Moscow SRI of Virus Preparations.)

The well documented observations recorded in this article led to the main conclusion that dilutions of the vaccinia virus ranging from 10^{-6} to 10^{-2} both in primary and continuous cultures of human amnion and of swine embryo kidney cells exerted a cytopathogenetic effect. The time of appearance and the intensity of the cytopathogenetic action stood in direct relation to the concentration of the virus.

Tissue cultures kept for 3 months at a temperature of -45°C were more sensitive to the vaccinia virus than control cultures kept at a normal temperature.

5. Li IUi, A new method of titrating the vaccinia virus in tissue cultures. Vop. virus. 7 (1962) 5:594-596.
(From the D. I. Ivanovskii Institute of Virusology, AMS, USSR, Moscow.)

In this paper the author described a method of titrating the vaccinia virus with the aid of hemadsorption tests. The technical details of this method must be studied in the original or in a translation.

6. Eremian, A. V. et al., A smallpox case with an atypical course, not diagnosed during the life of the patient. Vop. virus. 7 (1962) 5:597-601.
(From the Clinical Department of the D. I. Ivanovskii Institute of Virusology, AMS, USSR, the Poliomyelitis Research Institute, AMS, and the Moscow Clinical Infectious Disease Hospital No. 2.)

The authors gave a detailed description of the case of an 1.5 months old infant who during life seemed to suffer from septicemia but, as established by exhaustive examinations made with the autopsy material, actually suffered from smallpox. The general conclusions reached by the authors were that

1. During a smallpox epidemic affections of the type of a septicemic process may be present in debile not vaccinated children.

2. Under the conditions of a smallpox epidemic patients having scanty clinical manifestations but having had a possible contact with smallpox patients must be considered as suffering from this disease and adequate anti-epidemic measures must be taken in their case.

3. Patients in whom smallpox is combined with septicemia must receive a combined treatment, consisting of massive doses of antibiotics and of the administration of specific gamma-globulin.

7. Levkovich, E. N. and Pogodina, V. V., On the vaccination of goats as a method of prophylaxis against alimentary infection with tick-borne encephalitis. Report I. Study of the conditions and of the efficacy of experimental vaccination of goats. Vop. virus. 7 (1962) 2:193-198.
(From the D. I. Ivanovskii Institute of Virusology, AMS, USSR, Moscow.)

The authors of this article concluded that

1. Through subcutaneous injection of goats with formol-killed tick-encephalitis vaccine adsorbed to aluminium hydroxide a high degree of immunity can be produced which after revaccination equals that of the post-infectious immunity.

2. In non-immune goats subcutaneously infected with tick-encephalitis the virus can be isolated from the blood, milk, urine and feces. In immunized goats infected in the same manner the virus is either absent from the blood or present for considerably shorter periods. In this group of animals the virus is not present in the urine or in the stools.

3. These experimental results suggest the usefulness of vaccination as a protection against alimentary infection with tick-borne encephalitis.

Selected Abstracts-II/4

8. Gaidamovich, S. IA., The sensitivity of cultures of adult sheep kidney cell lines to the Japanese encephalitis virus. Vop. virus. 7 (1962) 2:199-201.
(From the Indicator Laboratory of the D. I. Ivanovskii Institute of Virology, AMS, USSR, Moscow.)
9. Obukhova, V. R. and Gaidamovich, S. IA., The cytopathogenic activity of different strains of Japanese encephalitis virus in cultures of embryonal sheep kidney epithelium cells. Vop. virus. 7 (1962) 2:201-206.
(From the D. I. Ivanovskii Institute of Virology, AMS, USSR.)
10. Terskikh, I. I., Agglutination tests with the elementary bodies of virus ornithosis. Vop. virus. 7 (1962) 2:215-219. (From the D. I. Ivanovskii Institute of Virology, AMS, USSR, Moscow.)
11. Terskikh, I. I. et al., A natural and a secondary focus of ornithosis in the Zavidovskii Raion of the Kalinin Oblast. Vop. virus. 7 (1962) 4: 93-99.
(From the D. I. Ivanovskii Institute of Virology, AMS, USSR, Moscow.)
12. Neustrov, V. D. and Pantov, V. N., Experimental data on the adaptation of the Japanese encephalitis virus to guinea-pigs. A note. Vop. virus. 7 (1962) 5: 622.

Papers 8-12 are quoted by title because of their possible interest for some readers of these abstracts.

13. Davydov, M. V., Serological reactions in patients with influenza and Q-fever. Vop. virus. 7 (1962) 2: 219-221. (From the Department of Microbiology of the Leningrad Sanitary-Hygienic MI and the S. P. Botkin Hospital in Leningrad.)

Referring to the observations made in the case of 33 Q-fever patients, the author stated that (a) complement fixation tests with R. burneti antigen gave a positive

result in 32 of the sufferers; (b) the Weil-Felix reaction was negative in 14 of the patients, positive at a titer of 1:50 fourteen times and at a titer of 1:100 five times; (c) agglutination tests with R. prowazeki gave a negative result in 28 patients, a weakly positive result (1:50) in 5; and (d) complement fixation tests with R. prowazeki antigen were negative 31 times and positive (1:400 - 1:800) in 2 out of the patients.

Evaluating these and analogous observations in patients supposed to suffer from influenza (5 of whom were found to suffer actually from typhus), the author stressed

"the importance of serological tests in patients with febrile affections made simultaneously with the antigens of different causative organisms for a possibly more exact determination of the nature of the disease, inter alia for a detection of frustrane forms of typhus. At the same time the findings made reveal the possibility of anamnestic serological typhus reactions including agglutination of the rickettsiae, regardless of a far remoteness of the past typhus attacks."

14. Solov'ev, V. D. and Bektemirov, T. A., To the problem of the differentiation of vaccinia virus and smallpox virus in tissue cultures. Vop. virus. 7 (1962) 4: 24-27. (From the Department of Virusology of the Central Institute for ATP, Moscow.)

The author found that

1. The cytopathogenetic action in tissue cultures becomes manifest earlier in the case of vaccinia virus than in that of the smallpox virus. The latter produces a more intensive formation of giant cells and cytoplasmic inclusions.

2. The most characteristic difference between the two viruses is that the smallpox virus produces small plaques in the cell layer under the agar overlay of monolayer cultures, whereas the vaccinia virus produces under these conditions large plaques.

Selected Abstracts-II/6

15. Andzhaparidze, O. G. et al., In vitro interaction of the tick-encephalitis virus and of susceptible cells. Report V. Phases of the development of the virus after infection of the cells with infectious RNA virus. Vop. virus. 7 (1962) 4: 28-30.
(From the Moscow SRI of Virus Preparations.)

Summarizing the results of their observations, the authors stated that

"The cycle of development of the tick-encephalitis virus in cells of the pig embryo kidney and in Hep-2 cells, infected with infectious RNA virus is identical and characterized by a latent period lasting up to 24 hours and a period of an increase in the amount of free virus, which becomes maximal 72-96 hours after the onset of cultivation."

16. Stetkevich, A. A., Comparative characteristics of the tick-encephalitis allergens in relation to the kind of material used from the suspension of the virus. Vop. virus. 7 (1962) 4: 30-35.
(From the Tomsk SRI for Vaccines and Sera and the Tomsk MI.)

The main conclusion reached in this article, the text of which does not lend itself to the purposes of a brief review, was that the allergen prepared with the aid of the allantoic fluid of chick embryos proved more suitable for the diagnosis of tick-borne encephalitis than the allergen obtained from mouse brain tissue.

17. Karaseva, P. S. and Semenov, B. F., Comparative evaluation of the suitability of various tissues for the detection of minimal doses of the tick-encephalitis virus. Vop. virus. 7 (1962) 4: 35-39.
(From the Moscow SRI of Vaccine Preparations.)

The authors established that with the aid of tissue cultures prepared from chicken fibroblasts or the kidney epithelium of pig embryos the virus of tick-borne encephalitis could be isolated from dilutions 10-100 times higher than those necessary for the intracerebral infection of mice or for the infection of SCH or Hep-2 cells.

18. IAgodinski, V. N. and Skvorzov, B. I., Experiences on the isolation of the tick-encephalitis virus from vectors with the aid of chick fibroblast tissue cultures. Vop. virus. 7 (1962) 4: 39-42.
(From the Medical Service of the Pacific Fleet.)

Making four series of tests with 720 ticks of the species Ixodes persulcatus collected in a tick-encephalitis focus, the authors obtained 4 strains from the tissue cultures and six strains with the aid of parallel tests in white mice.

19. Gaidamovich, S. IA. and Obukhova, V. R., Conditions for the detection of the complement-fixing antigen in tissue cultures inoculated with the viruses of Japanese and tick-borne encephalitis. Vop. virus. 7 (1962) 4: 42-47.

The conclusions reached by the authors of this study were that

1. The complement fixation test is suitable for the detection of tick-borne and Japanese encephalitis viruses in tissue cultures.

2. The activity of the complement-fixing antigen depends not only upon the infectious titer of the virus in the cultures under test but also on the size of the dose used for their inoculation.

20. Popov, V. F., Use of specific gamma-globulin for prophylactic and therapeutic purposes in a tick-encephalitis focus. Vop. virus. 7 (1962) 4: 53-55.
(From the N. F. Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR, Moscow.)

Working in the southern raions of the Kirov Oblast in the European part of the Soviet Union in 1960 and 1961, the author obtained satisfactory results with specific gamma-globulin in the prevention and treatment of tick-borne encephalitis.

Only one out of 788 persons receiving prophylactic doses of gamma-globulin after they had been bitten by ticks fell ill with tick-encephalitis, whereas 19 attacks of this disease were noted in an unprotected group of 504 persons. Equally good results were also reported by the local health station.

Selected Abstracts-II/8

The therapeutic results obtained in the case of 86 patients were likewise quite satisfactory, but the administration of gamma-globulin did not prevent the appearance of the second wave of the disease. The administration of gamma-globulin for either prophylactic or therapeutic purposes never led to the appearance of symptoms of serum sickness.

21. Lukina, R. N. and Neustroev, V. D., Influence of the residual humidity on the survival of the viruses of Japanese and tick-encephalitis in dried preparations. Vop. virus. 7 (1962) 4:116-117.

The authors concluded from their observations which are recorded in tabular form, that the survival rate of the two viruses in dried preparations was best if the residual humidity was not higher than 1%.

A temperature of 37° seemed most suitable for such studies on the vital resistance of the viruses.

22. Semenov, B. F. et al., A dry tissue vaccine for the prophylaxis of tick-borne encephalitis. Vop. virus. 7 (1962) 5: 613-614. (From the Moscow SRI of Virus Preparations.)

As stated in the introduction to this note, a fluid vaccine against tick-borne encephalitis is now being produced in the Soviet Union (see the book Poliomyelitis, Non-polio-myelitic Enteroviruses and Tick-borne Encephalitis by M. P. Chumakov et al., Moscow 1961).

For the preparation of a dry vaccine the present authors used the strains "Pan" or "Sof'ia" grown in tissue cultures of pig embryo kidney epithelia and inactivated the virus-containing culture fluid by treating it for 10 days at 14°C with an 1:2,000 formol solution. A mixture of saccharose and gelatin was then added, bringing the concentration of the former to 10% and that of the gelatin to 1%. The vaccine was then distributed in 1-2 ml quantities into 6 ml ampulles, kept for 24 hours at -40°C and finally lyophilised.

Initial experiences with this new well soluble preparation were satisfactory. However, assuming that there is still room for improvement of the vaccine, the studies of the authors are continued.

23. Semenov, B. F. et al., On the influence of the composition of the nutrient media on the multiplication of the tick-encephalitis virus in tissue cultures. Vop. virus. 7 (1962) 5: 622. (From the Moscow SRI of Virus Preparations.)

Selected Abstracts-II/9

To judge from this brief note, satisfactory results were obtained with media of various composition prepared with chick embryo fibroblasts or pig embryo kidney epithelia. Addition of 10% calf serum to the latter did not improve the results and even somewhat delayed the cytopathogenic action of the virus.

24. Minaeva, V. M., Study of the cytopathogenic action of the virus of spring-summer tick-borne encephalitis in various tissue cultures. Vop. virus. 7 (1962) 5: 623.
(From the Perm SRI for Vaccines and Sera.)

Quoted by title only.

25. Bychkova, E. N. and Shubladze, A. K., On the limits of storage of the experimental tissue vaccine against tick-borne encephalitis. Vop. virus. 7 (1962) 5: 624 note.
(From the D. I. Ivanovskii Institute of Virology, AMS, USSR, Moscow.)

The formol-killed fluid vaccine tested by the authors kept well for a year in ordinary bottles with rubber stoppers.

26. Marennikova, S. S. (Editor), Smallpox. Papers of the Conference on the Problems of Epidemiology, Clinique, Laboratory Diagnosis, Specific Prophylaxis and Therapy. Moscow 1961.

This important report, which is reviewed in Vop. virus. 7 (1962) 5:631-632, is available at the U.S.National Library of Medicine, Bethesda, Md.

27. Tleulin, S. Zh., Use of amiazin for the treatment of brucellosis under electro-encephalographic control. Zdrav. Kazakhstana 22 (1962) 3: 18-21.
(From the Department of Propedeutic Medicine of Karagandinsk MI.)

Quoted by title.

28. Grudev, F. I., On tularemic psychoses and their treatment. Zdrav. Kazakhstana 22 (1962) 7: 30-33.
(From the Psychiatric Department of the Semipalatinsk MI.)

Selected Abstracts-II/10

The author refers to 21 tularemia patients with mental derangement seen from 1948-1955 in the Omsk Hospital for Psychoneurotic Diseases. He found that in the case of acute psychoses it sufficed to treat the basic infection in the usual manner, streptomycin proving in his experience particularly effective. In long-lasting psychoses insulin treatment was found to be useful.

29. Uzbekova, B. R. et al., The present state of cutaneous vaccination against plague, brucellosis and tularemia. Zdrav. Kazakhstana 22 (1962) 7: 63-68.
(From the Central-Asiatic Anti-Plague Institute, MI, USSR.)

The authors report on the results of cutaneous vaccination of (a) 270 persons inoculated simultaneously with plague, brucellosis and tularemia vaccines; (b) 83 persons receiving the two first mentioned vaccines; and (c) 30 persons immunized only against plague. Summarizing the results of this work, the authors stated that

1. Combined cutaneous inoculation of live vaccines against plague, brucellosis and tularemia produced local reactions and reactions in the regional lymph nodes in only 8.2% of the vaccinated.

2. In persons who had reacted positively to the intracutaneous administration of tularin or brucellin before vaccination and more still in individuals who had reacted to both these allergens, post-vaccinal reactions were considerably more frequent (35%, respectively 47% and 66.7%). However, even in them the post-vaccinal reactions were short-lasting and not conspicuous.

3. After vaccination with two antigens - plague and brucellosis - or only against plague, reactions were noted only in limited numbers of persons (19.3%, respectively 10%). The reactions were likewise short-lasting and not violent.

4. After combined vaccination the larger part of the inoculated showed an accumulation of brucellosis agglutinins in their sera, which persisted for not less than 6 months. The percentage of persons with positive serological reactions and the agglutinin titer were higher in those vaccinated only against plague and brucellosis than in those given all three vaccines.

5. Burnet's allergic reaction on the contrary was more frequently positive in the last mentioned group than in those vaccinated only against plague and brucellosis.

6. Agglutination tests with tularemia antigen were positive in 73.8% of those simultaneously inoculated with all three vaccines. However, this percentage and the agglutinin titer were lower than was usual in persons vaccinated against tularemia only.

In the opinion of the authors further studies were necessary to decide whether the method of combined vaccination against plague, brucellosis and tularemia could be used for mass inoculation campaigns.

A valuable reference list is appended to this paper.

30. Babenko, L. V. et al., Scheme of an epizootological and epidemiological analysis of materials derived from stationary observations in a focus of tick-borne encephalitis. Med. parazit. 31 (1962) 5:584-586. (From the departments of Entomology and Epidemiology of the E. I. Martsinovskii Institute of Parasitology and Tropical Medicine, MH, USSR.)

The technical details of this article, which is based upon observations in the Kozulskii Raion of the Krasnoiarsk Krai, do not lend themselves to a condensation.

31. Pokrovskaja, E. I., Repellent and toxic action of chlorophos, chlorten, polychlorpyllen, MGU-22, RP-1, RP-50 and dimethylphthalate on the tick Dermacentor marginatus Sulz. Med. parazit. 31 (1962) 5: 622.

The conclusions reached by the author of this short note were that

- a) Dimethylphthalate, RP-1, RP-50 and MGU-22 cannot be recommended as repellents against D. marginatus.
- b) Chlorophos, chlorten and polychlorpyllen proved highly toxic for these ticks but had no repellent action against them.

Selected Abstracts-II/12

32. Noteworthy articles quoted by title in a reference published in the journal Med. parazit. 31 (1962) :625-627.
- a. Babkin, P. S., Further observations on the erythematous form of tick-borne encephalitis. Materialy mezhdinstitutskoj nauchnoj konferentsii po izucheniu prirodno-ochagovykh zabolevanii Sibiri i Dalnego Vostoka (Inter-Institute Scientific Conference Materials on the Study of Infections with Natural Foci of Siberia and the Far East). Tomsk, 1962 pp. 47-49.
 - b. -, To the problem of the immunity against tick-borne encephalitis. Ibidem, pp. 73-74.
 - c. Barkova, E. A. and Erusalimskii, A. P., Study of the immunogenesis in the various clinical forms of tick-borne encephalitis. Ibidem, pp. 50-52.
 - d. Boiko, V. A. and Gil'manova, G. Kh., The prognosis of the epidemiological potential of a natural focus of tick-borne encephalitis in Tataria. Ibidem, pp.24-25.
 - e. Buiakova, L. A. and Fedorov, IU. V., The agar precipitation reaction in tick-borne encephalitis. Ibidem, p. 78.
 - f. Vasil'eva, O. A. et al., Technical and epidemiological characterization of the anti-encephalitis brain vaccine issued by the TomNIIVS (Tomsk SRI for Vaccines and Sera). Ibidem, pp. 63-65.
 - g. Vereta, L. A., Experimental foundations of the alimentary transmission of the tick-borne encephalitis virus. Ibidem, pp. 32-33.
 - h. Vereta, L. A. et al., To the problem of the specificity of the hemagglutination inhibition reaction for the observation of the tick-borne encephalitis antibodies. Ibidem, pp. 59-60.
 - i. Veselova, IU. V. et al., Clinical and epidemiological characterization of tick-borne encephalitis in the Altai Krai. Ibidem, pp. 39-40.
 - j. Gilmanova, G. Kh., Complement-fixing antibodies against the strains of tick-borne encephalitis in the population of three raions of the Tatar ASSR. Ibidem, pp. 61-63.

Selected Abstracts-II/13

- k. Goncharova, A. A. and Buiakova, T. G., Gamaside ticks of the living quarters in Transbaikalia. Ibidem, pp. 71-72.
- l. Davydova, M. S., Gamaside ticks of the forest-steppe of Western Siberia as important components of the foci of natural infections. Ibidem, pp. 29-31.
- m. Dmitriev, I. A., To the study of the changes in the clinique and course of tick-borne encephalitis. Ibidem, pp. 74-76.
- n. Dubov, A. V. et al., Isolation of the tick-borne encephalitis virus from ticks in the focus of the north-eastern Altai. Ibidem, p. 7.
- o. Erofeev, V. S., Virusological and serological investigations in the Tomsk focus of tick-borne encephalitis. Ibidem, pp. 6-7.
- p. Igolkin, N. I. et al., Zoological-parasitological observations in the Tomsk focus and problems of the prognostication of tick-borne encephalitis. Ibidem, pp. 21-22.
- q. Ierusalimskii, A. P. and Barkova, E. A., Isolation of the virus from the intestinal contents of tick-borne encephalitis patients. Ibidem, pp. 10-11.
- r. Karpov, S. P. et al., Materials referring to the immunological structure of the natural foci of tick-borne encephalitis in the Tomsk Oblast. Ibidem, pp. 33-35.
- s. Karpov, S. P. et al., Prospects of the liquidation of tick-borne encephalitis in the Tomsk focus. Ibidem, pp. 67-68.
- t. Kereev, N. I., A contribution to the epidemiological geography of some infections entrenched in natural foci in Kazakhstan. Ibidem, pp. 83-85.
- u. Kondrashova, Z. N., On the presence of antibodies against the tick-borne encephalitis virus in large wild animals of the Priamur'e. Ibidem, pp. 35-36.
- v. Kondrashova, Z. N., Comparative characterization of the serological reactions for the observation of the antibodies against tick-borne encephalitis under experimental conditions. Ibidem, pp. 56-57.

Selected Abstracts-II/14

- w. Melent'eva, L. A., Virusological characterization of the tick-borne encephalitis focus in the Toguchinskii Raion of the Novosibirsk Oblast. Ibidem, pp. 8-9.
- x. Mitrokhina, L. A., Peculiarities of the clinique of tick-borne encephalitis in children. Ibidem, pp. 46-47.
- y. Netskii, G. I., To the problem of typing the natural foci of tick-borne encephalitis, Omsk hemorrhagic fever and tick-borne typhus in Western Siberia. Ibidem, pp. 80-82.
- z. Netskii, G. I. et al., Results of a determination of the degree of the harborage of the virus by ixodes ticks in the foci of tick-borne encephalitis and Omsk hemorrhagic fever in Western Siberia (1959-1961). Ibidem, pp.12-13.
- aa. Obert, A. S., Materials to the epidemiology and prophylaxis of tick-borne encephalitis in the Altai Krai. Ibidem, pp. 19-20.
- ab. Sapegina, V. F., On the frequency and distribution of Ixodes trianguliceps Bir. in the natural focus of tick-borne encephalitis of the North-east Altai. Ibidem, pp. 72-73.
- ac. Sapel'nikova, L. I., To the clinique of tick-borne encephalitis in the Kemerovsk Oblast. Ibidem, pp. 38-39.
- ad. Solomin, N. N. et al., Characterization of tick-borne encephalitis in the Sverdlovsk Oblast. Ibidem, pp. 15-17.
- ae. Stetkevich, A. A., Allergic diagnosis of tick-borne encephalitis. Ibidem, pp. 58-59.
- af. Trop, I. E. et al., Epidemiological characterization of tick-borne encephalitis in the Toguchinskii Raion of the Novosibirsk Oblast and prospects of the liquidation of its epidemic form. Ibidem, pp. 18-19.
- aq. Tiutiunnikov, A. F. et al., Zoological-parasitological observations in the foci of tick-borne encephalitis of the Sverdlovsk Oblast. Ibidem, pp. 25-27.
- ah. Tiushniakova, M. K., To the method of attenuating the virus of tick-borne encephalitis and on the properties of the changed virus. Ibidem, pp. 3-4.

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- ai. Fedorov, IU. V., Characterization of the serum preparations against tick-borne encephalitis produced by the TomNIIVS. Ibidem, pp. 65-66.
- aj. Feneva, N. A. et al., Zoological-parasitological and virus-logical characterization of the tick-borne encephalitis foci in the Tiumen Oblast. Ibidem, pp. 22-24.
- ak. Filatova, N. A. and Shvabauer, V. IA., Tick-borne encephalitis in the Omsk Oblast and methods of fighting it. Ibidem, pp. 14-15.
- al. Tselishchev, A. M. and Subbotina, L. A., To the problem of the differential diagnosis of the acute phase of tick-borne encephalitis and epidemic serous (enterovirus) meningitis. Ibidem, pp. 43-45.
- am. Shaiman, M. S., Materials to the distribution of Northern-Asiatic tick-borne typhus and Q-fever in Western Siberia. Ibidem, pp. 82-83.
- an. Shapoval, A. N. and Brandt, L. R., To the organization of the ambulatory treatment of persons recovered from tick-borne encephalitis in the Kemerovsk Oblast. Ibidem, 52-54.
- ao. Shubin, N. G., Therapy of tick-borne encephalitis in the acute and chronic stages. Ibidem, pp. 40-43.
- ap. Vizen, E. M. and Kniazev, A. N., A case of human laboratory infection with the virus of tick-borne encephalitis. Zh. nevropat. 62 (1962) 3:333-338.
- aq. Panov, A. G., The present state of the problem of tick-borne encephalitis and actual tasks of the study of the disease. Ibidem :321-332.
- ar. Kurchatov, V. I. et al., "Experiences with the method of distributing chemicals from airplanes for the fight against ixodes ticks on pastures." In Sbornik rabot nauchnoi konferentsii po protozool. probl. posv. 90-letiiu so dnia rozhd. prof. V. L. IAKimova (Collected Works of the Scientific Conference on Protozoological Problems Dedicated to the 90th Birthday of Prof. V. L. IAKimov). Leningrad, 1961 pp. 129-132.

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- as. Povarova, L. N., Experiences of a search for repellents and new acaricides for the fight against ixodes ticks. Ibidem, pp. 122-126.
- at. Sebast'ianov, A. Z., Methodology of the use of the 90% gamma-isomer of hexachlorane for the fight against pasture and scabbed ticks. Ibidem, pp. 287-290.
- au. Popov, V. M., The ixodes ticks of Western Siberia. Tomsk, 1962. 260 pp.
- av. P'ianykh, N. A., "Sanitary propaganda among the rural population in a focus of tick-borne encephalitis." Sanitarnoe prosveshchenie (Sanitary Instruction). Moscow, 1961, pp. 97-106.
- aw. Shepelev, D. S. and Tomin, IU. A., Distribution of the ixodes ticks in the Vologodskii Oblast and experience of the fight against them. Sbornik rabot vologodskoi nauchno-issledovatel'skoi stantsii (1961) 5:137-142.
33. Dalmatov, D. M., Allergic reaction to anti-tularemia vaccination. Sov. med. 26 (1962) 10:127-128.
(From the Department of Infectious Diseases of the M. I. Kalinin MI, Omsk.)

The author records the case history of one patient who lived in a raion of the town of Omsk where recently tularemia-infected water-rats had been found and where an apparently considerable number of human sufferers from this disease had been met with during the summer and autumn of 1961. She fell ill on the 7th day after vaccination with dry live tularemia vaccine with a slightly increased temperature, headache and weakness and developed a skin rash. Since her condition did not improve, she was admitted to hospital on the 21st day of her illness. She showed then on the face, ears, head and extremities a macular-vesicular exanthema and erosions, surrounded by zones of inflammation, on the mucosa of the hard palate. These manifestations gradually disappeared and the general condition of the patient was restored to normal within two weeks.

The opinion of the author was that

"in the case of this patient the vaccinal process took the above described course as a consequence of a preliminary sensitization of the body by small doses of the

infecting agent of tularemia, introduced in a vector-borne manner or by the alimentary route (the patient living in a raion of the city with a natural tularemia focus). Her organism, sensitized with tularemia antigen, responded with a stormy process, manifested mainly by a hyperinflammation of the skin and mucosa."

34. Dmitriev, N. E., To the problem of complications after smallpox vaccination. Sov. med. 26 (1962) 10:128-129. (From the Municipal Hospital in Bugul'ma, Tatar ASS.)

Reference is made in this note to two persons who responded to inoculation with dry smallpox vaccine by the appearance of generalized skin manifestations. The history of one of the two patients is set forth in detail.

35. Zdrodovskii, P. F., The most important stages and results of the study of human brucellosis abroad and in the USSR. Vestnik AMN 17 (1962) 9: 58-68.

After giving the history of brucellosis research first abroad and then also in the Soviet Union, the author thus summarized the results obtained in the latter:

1. It was established that in the Soviet Union human brucellosis is caused mainly by the "goat-sheep" type of the brucellae (Br. melitensis). Br. abortus and more rarely still Br. suis are responsible for sporadic attacks. Accordingly sheep and goats, particularly the former, form the reservoir of the infection and the disease is found mainly in the raions of major sheep-breeding.

The authors added that

"if natural foci of brucellosis (among rodents and other wild animals including ticks) form secondarily, they can play only a secondary role as source of the infection. Nevertheless the Soviet specialists consider it fully justified to include anti-tick measures in the campaigns against brucellosis."

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The possibility of a transition of the infection to the cattle has been demonstrated.

2. The fundamental sources and routes of alimentary, contact and aerial brucellosis infection in man through the normal secretions and pathological excretions of infected animals (milk, urine, aborted fetuses) have been studied in detail. Also demonstrated were (a) a prolonged survival of the causative organisms in extrinsic objects (water, soil, etc.) and (b) the conditions of self-purification of the products of animal-breeding (milk and milk products, meat, skins and wool, etc.).

3. Also achieved were a full characterization of the brucella group by cultural and serological methods and a differentiation of the brucella types with the aid of modern methods. The antigenic structure of the brucellae was thoroughly studied and was found to be independent from their pathogenic properties and from their type grouping ("belonging" to the respective types). The presence of dissociation in the brucella group was demonstrated and--for the first time--phenomena of bacteriophagy were observed in the brucellae (M. S. Drozhevkina). The problem of variation was studied.

4. Detailed studies were made of the primary and super-infection of guinea-pigs by various routes and with exact infecting doses, followed by a prolonged observation of the test animals. A phasic character of the infection was established. Experimental brucellosis was likewise studied in white mice and rats as well as in rabbits and chickens.

An exhaustive characterization of brucellosis in sheep was given, comprising its microbiology, clinique, the pathogenesis of abortions, the pathomorphology, immuno-diagnostic and epizootology.

6. The possibility of a spontaneous recovery from brucellosis was established in the case of laboratory animals, goats, sheep, cattle and also of man.

7. Experimental studies were made on the relations of the infectious and post-infectious immunity leading to the establishment of a sterile phase. The phagocytary mechanism of the immunity was demonstrated and the comparative importance of the serological indices was evaluated.

8. A detailed study was made of the laboratory diagnosis of human brucellosis in the various stages of the

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infection, including bacteriological methods (blood and bone-marrow cultures) as well as serological-allergic methods (agglutination, complement fixation, opsono-phagocytic reactions and Burnet's allergic test).

9. The pathology and pathomorphology of human brucellosis were studied with the aid of numerous autopsies, particular emphasis being placed on an evaluation of the pathogenetic importance of allergy.

10. The clinique of brucellosis in man, particularly in children, was studied in great detail including an evaluation of rational methods of treatment (vaccinotherapy, chemotherapy, X-ray treatment and balneotherapy).

11. After experimental studies for the first time large-scale practical use was made for the prevention of human brucellosis infection of a live vaccine prepared from attenuated strains of the cattle type.*

12. The rationality and efficacy of preventive vaccinations of sheep with a live brucellosis saponin-vaccine and with a live vaccine made from the cattle-type strain 104-M have been demonstrated.

Further discussing the problem of anti-brucellosis vaccination, the author maintained that

1. On account of their common antigenic structure, each of the three types of the brucellae--goat-sheep-type, cattle-type and pig-type--are capable of producing a cross-immunity against infection with the two heterogeneous types. In particular the cattle-type brucellae engender a satisfactory immunity against the (in the Soviet Union most common) infection with Br. melitensis.

2. The cattle-type brucellae, among which repeatedly variants not pathogenic for man have been observed, seem most suitable for the selection of strains suitable for human vaccination.

* The author quotes in this connection the papers by Zdrodovski et al. in the Revue d'Immunologie 20 (1956) :3 and J. of Inf. Dis. 101 (1957) :1-8.

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The search for such strains led to the adoption of two strains, the American strain Br. abortus 19, amply used for the immunization of cattle and the Soviet strain 104-M (Kh. S. Kotliarova).

According to data collected by P. A. Vershilova (1961), referring to the period 1951-1953, the use of the vaccine prepared from the strain Br. abortus 19-BA in man lowered the morbidity among the vaccinated 5-10 times as compared to a control group. Similarly S. M. Smirnov, evaluating the results of the immunizations made from 1952 to 1960 (about 5 million people were vaccinated in the latter year alone) found that the brucellosis morbidity among the vaccinated groups under risk of the infection was lowered four times, even though the disease persisted in the affected animal herds.

As mentioned above, Kotliarova recommended the museum strain Br. abortus 104-M for vaccination. Like the strain Br. abortus 19-BA it is innocuous for man in a dose of 100 million organisms and was found in 1959-1961 to lower the morbidity among the vaccinated 5-10 times (Kotliarova et al.).

E. I. Zamakhaeva and S. V. Abakin established that the strain Br. abortus 104-M was innocuous and efficacious when used for the immunization of sheep.

For the primary immunization of man both above mentioned strains were administered subcutaneously but, as shown by Vershilova and her associates, for the indispensable revaccinations it is possible to resort to cutaneous inoculation instead of giving a lesser vaccine dose by the subcutaneous route.

As first recommended by N. F. Zenkova in 1956, within recent years large-scale use has been made already for initial immunizations of the cutaneous administration of the live vaccine prepared from the strain Br. abortus 19-BA. The use of this simpler and more popular method of immunization has also been advocated by the experts of the Ministry of Health USSR and seems by now well accepted.

However, though it has been approved by Smirnov and his co-workers (1961), one ought to be cautious in regard to this method. Workers in Stavropol (see A. M. Poliakova, E. Zamakhaeva and others) found that cutaneous immunization with the strain 104-M in doses of 1-10 billion organisms produced in only 1/2-2/3 of the vaccinated an immunological response with a rapidly disappearing agglutination reaction.

Therefore the problem of the use of cutaneous vaccinations as the basic method needs further study. At the same time--in contrast to the primary vaccination--the value of the cutaneous method for revaccination has been fully demonstrated, because according to a general immunological law after a sufficiently intense primary immunization a weak antigenic stimulus suffices to render revaccination effective.

The above described vaccinations with live brucellosis vaccine form the basic method for preventing attacks of this disease among the population groups under risk of infection in the affected raions. Still, however useful, this method is only of palliative value.

Turning to the problem of taking direct action against the reservoir of the infection in the affected herds, the author admits that

"a sanitation of the affected farms by the usual sanitary-veterinary methods is an extremely difficult task, even apart from the fact that the measures to be taken in this respect do not always tally with the current tasks of national economy."

Turning his attention to future work, the author stresses the value of specific vaccination of the sheep and goat herds. The live vaccine prepared from the cattle-type brucellosis strain by Kotliarova appears suitable for this purpose. During the period from 1955-1960 this vaccine was thoroughly tried out in the Stavropol Krai under experimental and field conditions on sheep by a group of workers headed by Zamakhaeva and Abakin.

The vaccine was found innocuous even for pregnant sheep when given in large doses (8-10 billion organisms and caused a marked immunological response. It protected the immunized animals against challenge with large doses of a virulent brucella culture of the goat-sheep type, which caused a generalized infection in the controls. These favorable laboratory results were confirmed through field tests on 112,000 sheep which lowered the incidence of abortions among the immunized animals 7 times in comparison to the control group. Moreover, it was possible to establish 15 flocks of healthy female sheep out of vaccinated young animals taken from infected herds. At present the above mentioned workers try to consolidate the results of a sanitation of 6 sheep-breeding farms--a task, the completion of which is planned for 1961-1962.

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Thus, the author concludes,

"The prophylaxis against brucellosis among the threatened groups of the population, realized mainly through the administration of a live vaccine prepared from attenuated brucella cultures of the cattle-type, can be considerably reinforced through sanitary measures in the affected farms including vaccination of the sheep and goats with the live vaccine 104-M. The use of such vaccinations in the affected farms renders it considerably easier to form healthy herds and gives the possibility of liquidating the reservoir of the infection, what in its turn will permit to solve the problems of human brucellosis."

(No reference list is added to this instructive article so that--with the exceptions noted above--the numerous publications mentioned are quoted only by the name of their authors.)

36. Jen Kuang-hung et al., Studies on the methods of hemagglutination inhibition test for Japanese B encephalitis. Zhong Yixue Z 47 (1961) 7: 441.

A summary of this article will be found in the Chinese medical Journal 81 (1962) 8: 553.

37. Magazanik, S. S. and Pogodina, V. V., The diagnosis of sub-clinical forms of tick-borne encephalitis. Klin. med. 40 (1962) 9: 40-46.
(From the Department of Nervous Diseases of the Sverdlovsk Institute for Balneo- and Physio-Therapy and the Tick-Encephalitis Laboratory of the Institute of Poliomyelitis and Virus Encephalitides, AMS, USSR.)

The findings recorded in this paper are based on an observation of 60 inhabitants of the Sverdlovsk Oblast who in 1959-60 had been bitten by ticks; as was established through serological and virusological tests, half of them had been attacked by infected ticks. Part of the bitten individuals received for prophylactic purposes hyperimmune anti-tick encephalitis horse serum or gamma-globulin, some a course of quinacrine prophylaxis. Twenty-one of the persons bitten by infected ticks showed the slight signs of subclinical tick-borne encephalitis described by the authors.

38. Madzhidov, V. M., The clinical picture of residual signs of brucellosis. Klin. med. 40 (1962) 7: 21-26.
(From the Department of Infectious Diseases of the Sanitary-Hygienic and Pediatric Faculties of the Tashkent State MI.)
39. Naumov, A. I., Some data on the functional state of the liver in brucellosis. Ibidem: 26-32.
(From the Department of Infectious Diseases and Epidemiology and the Department of Biochemistry of the Saratov MI.)
40. Grinshpun, A. S., Some data on the functional state of the adrenal cortex in brucellosis patients. Ibidem: 33-38. (From the Department of Clinical Pro-pedeutics of the Karaganda MI.)

These three well documented papers, dealing with the clinique, respectively with the clinical pathology of brucellosis, are quoted by title only.

41. Terent'ev, N. T., A case of Q-fever. Klin. med. 40 (1962) 7: 129.

In the introduction to this short note the authors stated that it is not a rare event for the medical practitioners in Central Asia, Povol'zhe and the Ural region to meet Q-fever patients but that quite frequently in such cases they make a diagnosis of influenza. Though many observers consider pneumonic processes as almost pathognomonic for Q-fever, their presence is not a sine qua non and generally the symptomatology of this disease shows marked variances.

The patient observed by the author, though having a high temperature as well as signs of bradycardia and a considerable enlargement of the liver, felt subjectively quite well. There was no evidence of pneumonia and rashes, pains in the articulations, nausea and vomiting, headache and general debility were absent.

(The place where the patient was hospitalized is not stated.)

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42. Ierusalimskii, A. P. and Barkova, E. A., The pathogenesis of lesions of the gastrointestinal tract in tick-borne encephalitis. Klin. med. 40 (1962) 7:130-133.
(From the Clinic of Nervous Diseases of the Novosibirsk MI and the Omsk SRI of Diseases with Natural Foci.)

The findings recorded in this paper are based on the observations of 56 patients with tick-borne encephalitis met with in the summer of 1961 in a raion of the Novosibirsk Oblast, 35 of whom, though infected by tick-bites, showed gastrointestinal disturbances of a varying degree. The intensity and localization of the latter led in one instance to an initial diagnosis of acute pancreatitis, in three to that of appendicitis and one of these sufferers was operated.

It is important to note that according to the findings of the authors (a) signs of gastrointestinal disturbances may become manifest in patients suffering from the frustrane form of tick-borne encephalitis, when no clinical evidence of an affection of the nervous system is found; (b) during the first days of illness the virus of tick-borne encephalitis is excreted in the stools.

43. Kalinina, E. F. et al., Action of gamma-radiation CO^{60} on the smallpox vaccine and the concomitant microflora. Med. zhur. Uzbek. (1962) 2: 45-46.
(From the Tashkent SRI of Vaccines and Sera.)

As stated in the concluding sentence of this note,

"an (irradiating) dose of 800,000-1,000,000 r gamma not only frees the smallpox vaccine from the concomitant microflora but also insures a sterility of the product for a more prolonged time."

44. Shifrin, A. R. and Tomashivskii, D. I., On secondary skin eruptions in connection with anti-tularemia vaccination. Sov. med. 26 (1962) 11: 56-59.
(From the Department of Skin and Venereal Diseases of the Stanislav MI.)

The authors quote in detail the history of a woman who developed skin manifestations after she had been cutaneously

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inoculated against tularemia. In their opinion the appearance of these rare after-effects of immunization against the disease were due to an increased state of reactivity of the persons in question and the subsequent development of an allergic state under the influence of scratching and autoinoculation.

45. Iarovoi, L. V. and Poliakova, A. M., On the therapeutic efficacy of intramuscularly administered oxytetracycline and cyanophitin in experimental brucellosis. Antibiotiki 7 (1962) 11:989-996.
(From the Department of Infectious Diseases of the Stavropol MI and the Brucellosis Section of the SRI of the Caucasus and Transcaucasus.)

On account of their elaborate experimental studies and previous clinical experiences the authors recommended oxytetracycline for the treatment of brucellosis.

Cyanophitin, a product obtained from lake water plants, gave considerably worse experimental results.

46. Chernukh, A. M., Some impressions regarding the elaboration of chemotherapeutic problems in the United States. Antibiotiki 7 (1962) 11:1043-1046.
Quoted by title only.
47. Vasil'eva, N. I., Blood production in brucellosis patients treated with antibiotics and vaccine. Thesis, Orenburg (1961).
(From the Therapeutic Faculty of the Orenburg State MI.)
48. Dzhaliilov, K., Bacteriological control of the efficacy of brucellosis treatment with combined antibiotics. (Clinical and experimental investigations.) Thesis, Tashkent (1961). (From the Tashkent State MI.)
49. Radyshin, N. S., Pathological morphology of experimental brucellosis in animals treated with levomycetin. Thesis, Odessa (1960). (From the Odessa State Institute.)

These theses are quoted by title in a list published in Antibiotiki 7 (1962) 12:1120-1126.

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50. Andzhaparidze, O. G. et al., Chronic infection of cells with the virus of tick-borne encephalitis. I. Properties of the cells of chronically infected cultures. Vop. virus. 7 (1962) 6:650-654.
(From the Moscow SRI of Virus Preparations.)

The conclusions reached through the observations of these authors were:

1. It was possible to produce a chronic latent infection of HEp-2 cells with the viruses of tick-borne encephalitis (strains Sof'in, lx-10, Pan), with the Absettarov strain of two-wave meningo-encephalitis and also to produce this type of infection with the Sof'in strain in CMH and HeLa cells.

2. The chronic form of latent infection was characterized by the absence of a specific cell degeneration and the constant presence of the virus in the cells as well as in the culture medium.

3. The HEp-2 cells chronically infected with the various tick-encephalitis strains differed from controls through a less active multiplication, suppression of the metabolic activity and partly also through changes of the growth characteristics.

4. CMH and HeLa cells chronically infected with the Sof'in strain differed from non-infected cells through a lowered rapidity of growth.

51. Semenov, B. F. et al., Cultivation and inactivation of the tick-borne encephalitis virus for the preparation of a prophylactic vaccine. Vop. virus. 7 (1962) 6:654-657.

The investigations in point showed that

- a) For the preparation of the vaccine cultivation in kidney epithelium cells of pig embryo was preferable to that in chicken fibroblasts.
- b) Inactivation with 1:2,000 formol at 14°C for 10 days or with beta-propiolactone (0.5:1,000) for 4 hours yielded innocuous and immunogenic vaccines.
- c) The formol-treated vaccine proved more stable when stored than that inactivated with beta-propiolactone.

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52. Komandenko, N. I., Influence of pressurized oxygen on the course of experimental tick-borne encephalitis in white mice. Vop. virus. 7 (1962) 6:658-661.
(From the Order of Lenin S. M. Kirov Military Medical Academy, Leningrad.)

Summarizing the result of his observations the author stated that

1. White mice infected with 1 LD₁₀₀ dose of tick-borne encephalitis virus and exposed to 2 atmospheres of oxygen survived in 21.3%; of those infected with 1 LD₅₀ 71% survived as against 43.9% of the controls.
2. Pressurized oxygen prolonged the incubation period in mice experimentally infected with the tick-borne encephalitis virus.
3. Observations on the dynamics of weight and temperature of the test animals permitted to postulate that the action of pressurized oxygen in experimental infection with the tick-borne encephalitis virus was due mainly to a depression of the metabolic processes.

53. Pshenichnov, A. V. et al., A contribution to the epidemiology of tick-borne encephalitis in the Ural. Vop. virus. 7 (1962) 6:661-665.
(From the Perm Vaccine and Serum Institute.)

On account of investigations made from 1956 to 1960 in 19 raions affected to a varying degree by tick-borne encephalitis the authors stated that

1. Examination of 166 lots, each consisting of 30 ticks, led to the detection of the infection in 72 lots (43%).
2. Antibodies to the virus of tick-borne encephalitis were found with the aid of complement fixation tests in 25-44% of the 813 persons examined in this respect. No parallelism could be found between the results of these tests in the individual raions and the incidence of manifest attacks of the disease.
3. There is reason to assume that an alimentary infection of man (through the milk of affected animals) leads most often to the appearance of frustrane (symptom-less) forms of the disease, whereas tick-bites are responsible for clinically manifest attacks.

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4. Most of the 35 virus strains isolated in 1960 from 62 lots of ticks were of a typical character. It is noteworthy, however, that, besides a highly virulent strain isolated in the worst-affected raion, five strains with an apparently stable low virulence were found. As the authors added,

"In the ticks collected in raions free from the disease, the virus could be isolated only with the aid of mouse experiments, whereas in the raions with a high morbidity it was found not only in the mice but also in tissue cultures, in which, however, no cytopathogenetic effect could be noted."

There was thus reason to assume that the peculiarities of the virus strains circulating in a given locality exerted an important influence on the degree of its affection with tick-borne encephalitis.

54. L'vova, A. I. and Titova, N. G., The use of various virusological methods for the detection of cell-bound and free antigens during the development of tick-borne encephalitis infection in tissue cultures. Vop. virus. 7 (1962) 6:665-670.
(From the D. I. Ivanovskii Institute of Virusology, AMS, USSR.)

The conclusions reached in this article, the technical details of which must be studied in the original or in a translation, were that

1. The earliest and most reliable results in the detection of the antigen of tick-borne encephalitis in the cell fraction with the aid of the method of fluorescent antibodies, hemagglutination and complement fixation tests were obtained with the first mentioned procedure.

2. The appearance and the character of increase of the complement-fixing antigen in the culture fluids corresponded to changes in the picture of fluorescence in the cells.

3. A parallelism could be observed between the infectious titer and the hemagglutinin titer in the culture fluids.

55. Solov'ev, V. D. et al., A study of the cross immunity to the vaccinia and smallpox viruses in monkeys. Vop. virus. 7 (1962) 6:701-705.
(From the Department of Virusology of the Central Institute for ATP, the Municipal Sanitary-Epidemiological Station and the SRI of Virus Preparations, Moscow.)

As stated in the introductory paragraph of this article, the object of the authors was to evaluate the cross immunity produced through inoculation with the dermovaccine widely used in the 1959-1960 smallpox epidemic at Moscow and also the action of the tissue culture vaccine issued by the Moscow institute of virus preparations. Nine Macacus rhesus monkeys, obtained from China, were used for these purposes.

Summarizing their findings the authors stated that

1. The vaccinal process in monkeys inoculated with either the dermo- or the tissue culture vaccine developed in an identical manner, being manifested by a local reaction, fever, viremia and the formation of antibodies.

2. As observed in the non-vaccinated monkeys, the smallpox virus, when passed through tissue cultures of human amnion cells, remains capable of producing a generalized infection, which occurs in a mild form resembling the varioloid in man.

3. A cross immunity was found to exist between the two vaccines and also the smallpox virus isolated at Moscow in 1959, what, as the authors concluded, indicated a conformity of their antigenic structure and also proved the immunogenicity of the vaccine used for the immunization of man.

56. Gurvich, E. B., On the isolation and cultivation of the chickenpox and Herpes zoster viruses in tissue cultures. Vop. virus. 7 (1962) 6:706-712.
(From the Moscow I. I. Mechnikov SRI of Vaccines and Sera.)

In the summary to this article, the details of which do not lend themselves to the purposes of a brief review, the author stated that

1. The chickenpox and Herpes zoster viruses, which for a long time could not be produced under laboratory

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conditions, can be isolated with the aid of monolayer cultures of the skin-muscle tissue of human embryos.

2. Both in the primary cultures and under passage no differences could be found between the cytopathologic changes produced by either of the two above mentioned viruses.

3. Both viruses can be maintained in tissue cultures through passages.

4. The two viruses did not produce hemagglutination of chicken erythrocytes and failed to induce the hemadsorption phenomenon.

5. It is possible to make with the aid of tissue cultures a differential diagnosis between the two viruses on the one hand and the smallpox virus on the other hand.

57. Terskikh, I. I. and Popova, O. M., "Urgent" (emergency) prophylaxis of ornithosis with dibiomycin. (Proposal of a scheme for its use.) Vop. virus. 7 (1962) 6:712-715. (From the D. I. Ivanovskii Institute of Virusology, AMS, USSR, Moscow.)

Quoted by title only.

58. Archakov, B. G. et al., Comparative data on the determination of the concentration of the vaccinia virus through titration in chick embryos and in tissue cultures. Vop. virus. 7 (1962) 6:731-734.

Using statistical methods, the authors confirmed the value of titration of the vaccinia virus in skin-muscle tissue cultures of chick embryos recommended by Marennikova and Osenina (Trudy Moskovskogo n.-issle. inst. vaktsin i syvorotok [Trans. Moscow SRI Vaccines and Sera] 14 [1959]: 207). In contrast to these workers, the present authors advocated the use of suspensions of trypsinized chick embryo cells for this work.

59. Karpov, S. P. and Selezneva, A. A., The use of the hemagglutination inhibition reaction for the diagnosis of tick-borne encephalitis. Vop. virus. 7 (1962) 6:740-741. (From the Tomsk MI and the Tomsk SRI for Vaccine and Serum.)

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The authors used the sera of 262 patients with tick-borne encephalitis for parallel complement fixation and hemagglutination tests, stating that the latter proved positive in 93.1% as against 53.4% in the case of complement fixation. During the first five days of the illness the hemagglutination inhibition method gave 90.8% positive results, that of complement fixation only 43%.

60. Fedorov, IU. V. et al., To the problem of producing a dry inactivated brain antigen for complement fixation tests in a tick-borne encephalitis. (Annotation.) Vop. virus. 7 (1962) 6: 741.
(From the Tomsk Vaccine and Serum Institute.)

As this brief note states, the antigen was prepared by freeing the brain of white mice affected by tick-borne encephalitis from ballast substances according to the method of Tovarnitskii (in regard to which neither a reference nor details are given) and was inactivated with 0.1% formol. Both the inactivation and the subsequent drying of the antigen markedly lowered its activity.

61. Lopatin, A. N. et al., Instance of a second attack of tick-borne encephalitis. (Annotation.) Vop. virus. 7 (1962) 6: 741.
(From the Krasnodar MI.)

The patient referred to in this note showed clinical signs of tick-borne encephalitis in July 1956 and once more one year later, both times after tick-bites. Repeatedly made virus-neutralization tests made in 1957 proved positive at increasingly high titers.

The authors claim that theirs is the first convincing evidence of a recurrence of tick-borne encephalitis.

62. Dmitrienko, N. K., Virusological examination of ixodes ticks collected in the environs of Alma-Ata. (Annotation.) Vop. virus. 7 (1962) 6: 742.
(From the Republic Sanitary-Epidemiological Station and the Kazakh Institute of Epidemiology, Microbiology and Hygiene.)

Examination of 1528 ticks collected in 1959 in a raion of the Ala-Tau mountains led to the isolation of 17

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strains of the tick-encephalitis virus from 46 lots of Ixodes persulcatus, 5 strains from 11 lots of Dermacentor pictus and one strain from 3 lots of D. marginatus.

63. Marennikova, S. S. and Akatova, E. M., Study of biomyacin in experimental smallpox infection. (Annotation.) Vop. virus. 7 (1962) 6: 743.
(From the Moscow I. I. Mechnikov Vaccine and Serum Institute.)

Finding that biomyacin exerted an action on the vaccinia virus in vitro, the authors used this antibiotic in experiments on rabbits, guinea-pigs and chick embryos. Satisfactory results were obtained only in the prevention of keratitis in guinea-pigs. In this case the application of biomyacin to each eye 30 minutes before infection or 2 hours after infection with smallpox virus almost invariably prevented the development of a specific keratitis. Results were somewhat less satisfactory in the case of vaccinia infection.

64. Proreshnaia, T. L., Isolation of R. burneti from the bone-marrow of experimentally infected guinea-pigs. (Annotation.) Vop. virus. 7 (1962) 6: 745.
(From the Kirghiz MI.)

The author used the bone-marrow of guinea-pigs which had been infected with R. burneti and killed after intervals of from 10 to 90 days for subcutaneous injection of healthy animals. Complement fixation tests were still weakly positive in the latter animals if sacrificed three months after infection.

65. Zhdanov, V. M. and Gaidamovich, S. IA., On the classification and nomenclature of viruses. Vop. virus. 7 (1962) 6: 749-754.

This important article and particularly the systematic list of viruses of medical importance proposed by the authors must be studied in the original or a translation. Adequate references to both Soviet and foreign publications enhance the value of the compilation.

66. Urakov, N. N. et al., Experience of human immunization with killed Q-fever vaccine. Zh. mikrobiol. 33 (1962) 11: 11-16.

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For their studies, which covered a period of five years, the authors first used vaccine lots prepared in the Gamaleia Institute with a titer of 250 million organisms, then a vaccine prepared by themselves according to the official instructions. This was used for initial immunization in doses of 0.25, 0.5 and 1 ml administered subcutaneously at 7 day intervals. Revaccination was done after one year with a single 1 ml dose.

Summarizing their experiences, the authors stated the following:

1. After the initial immunization of 549 persons with killed Q-fever vaccine abscesses at the site of injection were observed in 6 persons (1.1%) whereas after revaccination of 100 persons with 1 ml doses such an abscess formation was noted in 19%.

2. The development of a post-vaccinal immunity was shown by the appearance of specific complement-fixing antibodies and agglutinins, present in the sera of the vaccinated at high titers for 6-7 months. Though afterwards these titers became gradually lower, it was possible to observe still 4-5 years after the vaccination in 1/3 of the immunized persons complement-fixing antibodies at titers from 1:5 to 1:20.

3. Since infiltrations and abscesses were more frequent after revaccination than after the initial immunization, one might consider these complications as due to a local anaphylactic reaction.

4. In order to lower the reactions produced by the killed brucellosis vaccine, it would be well to test the efficacy of lower doses in man--e. g., that of two doses of 0.5 or even 0.25 ml--since such a lower dosage has been found fairly efficacious in laboratory animals.

67. Aleksandrov, N. I., Gefen, N. E. et al., Aerosol immunization with dry powder vaccines and anatoxins. Report X. Clinical study of the post-vaccinal reactions to aerosol immunization with powder anti-brucellosis vaccine. Zh. mikrobiol. 33 (1962) 11: 31-37.

Aerosol immunization of a group of over 1200 persons with dry brucellosis vaccine, prepared from the strain 19-BA and used in doses of 250 - 820 million organisms led to the following experiences:

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1. Aerosol immunization of persons not sensitized to brucellosis infection with a dry anti-brucellosis vaccine in optimal doses proved to be innocuous and not causing severe reactions.

2. The use of this method in persons sensitized to the infection led to more frequent and more marked reactions, which, however, were short-lasting and not qualitatively different from the reactions in the not sensitized group.

3. Further studies are necessary to decide whether it would be permissible to carry out mass vaccinations against brucellosis without the preliminary use of sero-allergic tests.

(As shown in the reference list, earlier papers on aerosol immunization by Aleksandrov et al. appeared in Voenno-med. zh. (1958) 12: 34; Zh. mikrobiol. (1960) 10: 44 and 12: 38; (1961) 7: 56 and 9: 3.)

68. Kozlov, M. P., On the state of immunological reactivity in the brucellosis-vaccinated workers of a meat-packing plant at remote periods. Zh. mikrobiol. 33 (1962) 11: 43-46. (From the Scientific Research Anti-Plague Institute of the Caucasus and Transcaucasus.)

Observations on a large group of workers in a meat-packing plant of the North Caucasus, where during the period of study (1953-1958) almost every month brucellosis-affected animals were slaughtered, led to the following conclusions:

1. In the group of workers immunized with live Br. abortus 19-BA vaccine, post-vaccinal immunological reactions were found to persist for up to 6 years, presumably owing to repeated infections contracted during the work with infected materials.

2. The frequency with which persons long showing positive immunological reactions fell ill with brucellosis stood in relation to the length of time since their vaccination. Brucellosis attacks among them were notified 3-4 times more often than during the first year after immunization.

3. Among the permanent workers of the meat-packing plant 80.4% showed immunological reactions after vaccination and one revaccination. To avoid an increase of the sensitization of the positive reactors, it appeared advisable to administer anti-brucellosis vaccination to workers in meat-packing factories only after their immunological reactions had been ascertained.

4. In order to protect the workers long showing post-vaccinal reactions against brucellosis infection, it seemed advisable to transfer them to departments of the plants where the risk of infection was low.

69. Usmanova, S. A., Experimental combined immunization against diphtheria and smallpox. Report III. Combined immunization with adsorbed diphtheria anatoxin and smallpox vaccine. Zh. mikrobiol. 33 (1962) 11: 52-56. (From the Kazan Institute of Epidemiology, Microbiology and Hygiene.)

Experimental observations on white mice and rabbits showed that

1. Smallpox vaccine, administered intraperitoneally at the time of the first injection of adsorbed diphtheria anatoxin exerted no substantial influence on the accumulation of antibodies in the blood of white mice.

2. The administration of smallpox vaccine to white mice and rabbits simultaneously with the second injection of the anatoxin markedly stimulated the formation of antitoxin.

3. Smallpox vaccination at the time of the first revaccination with adsorbed anatoxin neither stimulated nor inhibited the accumulation of antitoxin in the blood of white mice and rabbits.

Because of these findings attention ought to be given to the advisability of immunizing children against smallpox at the time of administration of the second dose of adsorbed diphtheria anatoxin.

70. Zhdanov, V. M. et al., Comparative study of the intranasal and aerosol methods of anti-influenza vaccination. Zh. mikrobiol. 33 (1962) 11: 63-67. (From the Ivanovskii Institute of Virusology, AMS, USSR.)

Quoted by title only.

71. Shatrov, I. I. et al., On revaccination in the smallpox foci. Zh. mikrobiol. 33 (1962) 11: 67-70. (From the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

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As stated by the authors, during the smallpox epidemic at Moscow in January 1960:

"The absence of reliable data on the state of herd immunity, the comparatively high attack rate among the vaccinated and revaccinated and the large number of contacts in the focus led us to the idea of the necessity to repeat in the case of negative reactions the re-vaccination until the appearance of 'poxes' objectively indicating the presence of an immunity."

Therefore, in the large hospital where the authors made their observations, both patients and staff members showing a negative reaction after the first revaccination were again inoculated after 7-9 days and, if still reacting negatively, after the same interval of time for a third time. It was thus possible to obtain positive reactions, consisting of vesicles or pustules, in over 90% as against 31% after the first revaccination.

The authors recommended, therefore, the use of repeated revaccinations in smallpox foci.

As also mentioned by them, during the smallpox vaccination campaign in Moscow in 1960 out of a total of 6,464,865 inoculated persons 163 were hospitalized with post-vaccinal complications (post-vaccinal meningo-encephalitis in 22 instances, allergic reactions in 115, generalized vaccinia in 7, inoculation of the vaccine in 19). In the hospital one cardiac patient showed a generalized vaccinia and two patients with lymphogranulomatosis showed signs of necrosis at the site of inoculation, but no other serious sequelae were observed in the revaccinated persons.

72. Korobkova, E. I. and Samoilova, L. V., On the nature of plague immunity. Zh. mikrobiol. 33 (1962) 11: 76-82.
(From the All-Soviet SRI "Mikrob.")

The conclusions reached by the authors of this article which must be studied in detail by those interested in the problems of plague immunology, were that

1. As a result of a study of the immunity developing after vaccinations with live (EV) plague vaccine, experimental proof was obtained for the theory of the presence of a phase of

non-sterile immunity which, after the body had become free of vaccinal microbes, was replaced by a sterile immunity. A peculiarity of the sterile immunity was its dependence upon the length and intensity of the non-sterile phase (the vaccinal process).

2. Killed chemical vaccines of various types produce a rapidly disappearing immunity of a relative intensity. The immunogenicity of the various fractions of the plague bacillus is considerably below that of live vaccine prepared with immunogenic strains. Moreover, the efficacy of chemical vaccines has not yet been confirmed through epidemiological observations.

73. Silant'ev, E. I. et al., Immunity to anthrax under the action of ionizing radiation. Zh. mikrobiol. 33 (1962) 11:121-123. (From the Central Institute for ATP and the State Scientific Control Institute of Veterinary Preparations.)

The conclusions of the authors were that

1. General irradiation of guinea-pigs, producing a comparatively slight form of radiation sickness, exerted no influence on the production of a specific immunity against anthrax and did not change the resistance of the vaccinated animals to this infection if there was an interval of not less than 9-10 days between immunization and irradiation.

2. Immunized animals, subjected to irradiation causing a slight degree of radiation sickness, remained specifically immune against anthrax.

3. In non-immunized animals, irradiated with analogous doses, inoculation with the STI vaccine 2-3 weeks after irradiation produced a stable immunity against anthrax.

74. Saïamov, R. M., Cholera in foreign countries (1957-1961). Zh. mikrobiol. 33 (1962) 12: 3-7.

(From the Scientific Research Anti-Plague Institute in Rostov/Don.)

75. Gur'ianova, L. I. et al., On the organization of measures for the sanitary protection of the borders by the Leningrad Port Anti-plague Station and the municipal observation stations. Zh. mikrobiol. 33 (1962) 12: 11-16. (From the Leningrad Anti-Plague Observation Station.)

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76. Kosminskii, R. B., Methods of the eradication of rodent fleas with synthetic insecticides in settlements and in the open. (Survey.) Zh. mikrobiol. 33 (1962) 12: 71-76. (From the Scientific Research Anti-Plague Institute of the Caucasus and Transcaucasus, Stavropol.)
77. Shura-Bura, B. L. et al., Study of the migration of Rattus norvegicus with the aid of labeled atoms. Zh. mikrobiol. 33 (1962) 12: 76-81. (From the Military-Medical Academy and the Leningrad Port Anti-Plague Station.)

These four articles are quoted by title only.

78. Abushev, F. A. et al., To the problem of the natural "focality" (natural occurrence) of tularemia in the Nakhichevan ASSR. Report I. Zh. mikrobiol. 33 (1962) 12: 41-44. (From the Dzhul'finsk Anti-Plague Detachment of the Azerbaidzhan Anti-Plague Station.)

The natural tularemia focus detected by the authors in 1958 was situated in a mountainous region of the Azerbaidzhan SSR, where the most frequent rodents were common voles (Microtus arvalis) and water-rats (Arvicola terrestris). The presence of tularemia in these and some other animal species could be demonstrated as follows:

<u>Species</u>	<u>1958</u>		<u>1959</u>	
	<u>Number Examined</u>	<u>Found Positive</u>	<u>Number Examined</u>	<u>Found Positive</u>
<u>Microtus arvalis</u>	450	13	157	2
<u>Arvicola terrestris</u>	29	3	4	-
<u>Apodemus silvaticus</u>	79	2	27	1
<u>Neomys fodiens</u>	9	2	2	-
Frogs	14	1	16	-

Seventy-eight tularin tests made in the local human population gave a positive result in 6 instances, exclusively in

persons over 40 years of age. The authors were of the opinion that the past tularemia affection of these individuals had been due to a water-borne infection.

79. Davidovich, V. F. et al., Peculiarities of the epidemiology of tularemia and methods of its eradication. Zh. mikrobiol. 33 (1962) 12: 44-49.
(From the Sanitary-Epidemiological Station of the Saratov Oblast.)

The results of their exhaustive investigations were adequately summarized by the authors thus:

1. Human tularemia attacks in the Saratov Oblast were first observed (in 1931) and afterwards most frequent in the raions on the right shore of the Volga and the adjacent steppe zones. Before World War II most outbreaks were vector-borne or water-borne or were related to water-rat hunting. As a result of a massive increase of the mouse and allied rodent species the outbreaks taking place from 1941-1949 were in the main, causally related to agricultural operations (threshing).

2. Of fundamental epizootological importance in the oblast were the water-rats, common voles, house and forest mice. In the semi-desert zone a substantial epizootological role was played by the steppe lemming, but hamsters (Cricetus eversmani and Cr. cricetus) were also of importance. The fundamental reservoir of the infection were ticks of the species Dermacentor marginatus, in the foci situated within the Volga floodlands possibly also Rhipicephalus rossicus ticks.

3. The absence of human tularemia manifestations in the Saratov Oblast since 1958 was due not only to improved agricultural methods but to a considerable extent to the mass immunization of the people with live tularemia vaccine.

4. For the planning of more efficacious prophylactic measures capable of eradicating the infection more exhaustive ecological studies of the whole oblast are required.

80. Miliutin, N. G., Zoological characterization and landscape classification of the natural tularemia foci in the Ukrainian forest area. Zh. mikrobiol. 33 (1962) 12: 84-89.
(From Gor'kii State University in Khar'kov.)

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The most important conclusions reached by the author of this article which does lend itself to a more detailed analysis, were that

1. The human tularemia attacks observed since 1945 in the Ukrainian forest area were mainly of the ulcero-bubonic type and, therefore, evidently due mostly to vector-borne infections.

2. Water-rats were of fundamental epizootological important.

3. Among the ticks the main role in the maintenance of the infection was played by Dermacentor pictus, while the diptera Chrysozona pluvialis and Aedes cinereus were most probably the vectors of tularemia.

81. Aleksandrov, N. I., Gefen, N. E. et al., Aerosol immunization with dry powder vaccines and toxoids. Report IX. Further studies on the post-vaccinal reactions and the immunological efficacy of aerosol immunization with dry brucellosis vaccine. Zh. mikrobiol. 33 (1962) 12: 95-102.

The conclusions reached in this article which must be studied in detail by workers interested in the problem of aerosol immunization were that

1. Aerosol immunizations with dry brucellosis vaccine may be administered to all practically healthy persons of both sexes 18 to 60 years old, provided that there are no medical contra-indications to vaccinations and no allergy to brucellosis is present.

2. The optimal dose for aerosol immunization against brucellosis equals 250-820 (1,000) million live organisms of the strain Br. abortus 19-BA.

3. In mass aerosol immunization against brucellosis the occurrence of post-vaccinal reactions is assessed by the number of people becoming sensitized.

4. In the case of persons formerly inoculated with live brucellosis vaccine by the cutaneous method but showing no positive sero-allergic reactions, aerosol re-vaccination does lead to increased post-vaccinal reactions.

5. Aerosol immunization produces a rapid immunological response found to last for one year (the limit of observations).

6. There is an urgent need to search for new and more adequate methods for the detection of persons sensitized to brucellosis.

82. Uglovoi, G. P. et al., On the possibility of using the antigen of a vaccinal strain of tularemia bacilli (Tual-lergen-2) for the rapid diagnosis of human tularemia. Zh. mikrobiol. 33 (1962) 12:102-107.
(From the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

While recommending the allergen prepared from B. tularensis with the aid of Boivin's trichloroacetic method for diagnostic tests in man, the authors stressed the need for further investigations to determine the activity of different concentrations of the product and the time of the appearance of positive reactions.

83. Ryzhov, N. V., Experimental efficacy of combined vaccinations against virus encephalitis, tularemia and brucellosis. Report I. Study of the method on rabbits. Zh. mikrobiol. 33 (1962) 12:120-122.
(From the Order of Lenin S. M. Kirov Military-Medical Academy.)

The investigations of the author showed that there was no objection to combining the immunization with formalized vaccines against tick-borne and Japanese encephalitis with the administration of live tularemia and brucellosis vaccines.

As found in the course of these studies, the combined or separate administration of the above mentioned anti-encephalitis vaccines produced signs of a local para-allergy against the tularemic allergen.

84. Reviews of articles in volume XXI (1959) of the Izvestiia Irkutskogo gosudarstvennogo nauchno-issledovatel'skogo instituta Sibiri i Dal'nego Vostoka (Bulletin of the Irkutsk State SR Anti-Plague Institute of Siberia and the Far East).

- 1) Nekipelov, N. V., The Transbaikalian plague focus as a part of the Central-Asiatic focus. (Pp. 19-42.)

This long and well documented account, containing information on the plague manifestations in Transbaikalia up to 1946 and in Mongolia to 1958 does not

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lend itself to the purposes of a brief review. As stated in the concluding paragraphs, a 10 km wide zone along the Transbaikalian-Mongolian border is being kept free from Siberian marmots (tarabagans), the main reservoir of plague. However, in the opinion of the author, the maintenance of this belt

"does not fully exclude the possibility of an importation of plague bacilli through fleas infesting mammalian predators and birds visiting the rodent burrows."

Another potential threat would be a mass multiplication of the Mongolian gerbils and their migration into Transbaikalia. Constant vigilance there as well as further studies of the plague situation in Mongolia are therefore indispensable.

2) Lipaev, V. M., Plague epizootics in the north-east of Mongolia. (Pp. 43-62.)

The conclusions reached by the author of this carefully documented report were that

1. The oldest and up to the present most active plague foci in Mongolia are situated in the northeastern part of the country.

2. The local foci are of the "one-host" type inasmuch as the tarabagan is of fundamental epizootological and epidemiological importance. The other rodent species* are apparently incapable of independently maintaining the epizootics.

3. According to the ecological and epizootological conditions the territory of north-east Mongolia may be divided into 3 zones - steppe, southern and northern forest-steppes.

4. The presently active plague foci are situated in the forest-steppe (particularly in the north) of the Eastern Khentei Mountains, characterized by rich grasslands, the highest density of the tarabagans and an abundance of vector fleas.

* The author mentions in this respect Ochotona daurica and Citellus undulatus.

5. Periods of dryness, which might play a role in the manifestation of plague enzootics, are absent from these parts.

6. The prophylaxis of plague in the Khentei foci ought to consist of the implementation of complex measures among the population of the enzootic raions, particularly of the prevention of infections among the persons engaged in the tarabagan trade. Main emphasis ought to be laid in this respect upon work among the groups of hunters coming to the foci from other parts of the country.

7. The principal means of the eradication of plague in Mongolia is a reduction of the population density of the tarabagans through organized hunting conducted according to the rules of prophylaxis and under the supervision of the local anti-epidemic organizations.

- 3) Shamova, A. M., An instance of isolation of plague and pseudotuberculosis cultures from rodents within the territory of an enzootic plague focus. (Pp. 63-67.)

The author observed in September 1958 in the Tsagan-Nur Somon of the Mongolian People's Republic a plague epizootic among the flat-skulled voles (Latin name of this Microtus species not given) as proved by the isolation of three P. pestis strains from these rodents and of one strain each from their fleas Paradoxopsyllus scorodumovi and Amphipsylla primaris mitis. The rodent species in question as well as the first mentioned of the fleas were found plague-affected for the first time.

The plague strains obtained upon this occasion were peculiar because fermenting rhamnose within 1-2 days and proving weakly virulent for guinea-pigs.

Since at that time an epizootic among the tarabagans was absent, it seemed that the flat-skulled voles played a part in the maintenance of plague in Mongolia.

The author also succeeded in isolating a pseudotuberculosis strain from this species. She noted in this connection that Karpuzidi and Drozhevkina (Trudy Rostovskogo protivochumnogo instituta 2 [1941]) claimed to have obtained such a strain from a sise1 in 1939, but that the latter worker (see ibidem 13 [1957]) afterwards classified this culture as an atypical P. pestis strain.

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- 4) Demin, E. P., A plague epizootic among flat-headed voles. (Pp. 68-69.)

This short note deals with the findings recorded in the foregoing article.

- 5) Ol'kova, N. V. and Smirnova, L. A., Seasonal susceptibility of the tarabagans and the long-tailed sisels (Citellus undulatus) to experimental plague infection. (Pp. 70-81.)

The main result of this study, the details of which do not lend themselves to a condensation, was that "the susceptibility of the tarabagans and long-tailed sisels shows seasonal changes, becoming lowered from spring to autumn."

- 6) Kolesnik, R. S. and Pletnikova, G. P., To the characterization of experimental plague in the Dauria sisel (suslik). (Pp. 82-91.)

The authors concluded that

1. Dauria sisels, experimentally infected with plague in summer, suffer mainly from an acute type of the disease with an early appearing septicemia.

2. Side by side with this prevalent acute type of plague there occur cases of a slight infection with proliferative changes in the lymph nodes and internal organs-- a difference due to a different susceptibility of the animals.

- 7) Klets, E. I. et al., Susceptibility of some rodent species of the Primorskii Krai (Coastal Province) to experimental plague. (Pp. 92-97.)

Unfortunately the authors use no Latin names in their text. They summarized that

"The highest susceptibility to artificial (plague) infection was shown by the rat-like hamster and the dwarf mouse (Micromys minutus); the Asiatic forest and the field mice as well as the eastern and grey-red voles were little susceptible. The susceptibility observed in the black rats

(R. rattus) and the house mice was quite high. The grey rat (R. norvegicus) showed a comparatively high resistance to experimental plague."

- 8) Aparin, G. P. and Tereshchenko, I. F., Age-conditioned susceptibility of guinea-pigs and white mice to experimental plague infection. (Pp. 98-107.)

Since, as stated in the introduction to this article, the only available reference to age-conditioned differences in the plague susceptibility of laboratory animals was a brief statement of K. F. Meyer (J. Immunol. 64 [1950] 3:147) to the effect that during winter young guinea-pigs may become refractory to the infection, the authors made experimental studies of this subject with this species and white mice. Summarizing the results of their investigations, they stated that

1. The susceptibility of young guinea-pigs to experimental infection with P. pestis markedly drops in winter and becomes considerably increased in summer.
2. In the young guinea-pigs infected with plague in winter one notes a different length of illness: in those 1-2 days old the disease runs a rapid course, whereas in the animals 20-21 or 25-26 days old the duration of the illness is considerably prolonged in comparison with control animals.
3. Young guinea-pigs develop following anti-plague vaccination a less solid immunity than adult animals.
4. The susceptibility of young white mice to experimental plague infection is lowered but they are apt to become affected during the first days of their life.
5. Age and weight of adult guinea-pigs exert no influence on their plague susceptibility.
6. Aged white mice are considerably more refractory to plague infection than middle-aged animals.

- 9) Domaradskii, I. V., To the problem of the invasiveness of the plague bacillus. (Pp. 108-121.)

This important review can be quoted here by title only, because in order to master its contents a study of the original or a full translation is indispensable.

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(It is interesting to note that in the long reference list appended to this article only 13 Soviet papers are quoted as against 59 by Western authors.)

- 10) Domaradskii, I. V. et al., On the anti-fermentative action of anti-plague sera. (Pp. 122-127.)

The conclusions reached in this article, which also requires a detailed study, were that

"Single cultivations of the plague bacillus on media containing normal or immune horse serum exert no influence on the catalase or phosphatase activity of the organism.

Prolonged cultivation of avirulent P. pestis strains in the presence of sera lowers the activity of only one ferment-catalase; under the same conditions the catalase activity of a virulent strain does not decrease. The influence of the sera on the catalase activity of avirulent strains is of an un-specific character and does not stand in relation to the curative or preventive properties of the sera.

Immune and normal sera exert no anti-fermentative action in respect to the catalase and phosphatase activity of washed cells of P. pestis grown on serum-free media."

- 11) Aparin, G. P., To the problem of mixed infections in plague. (Pp. 178-180.)

In order to contribute to the problem of the influence exerted by heterogenous infections upon that with P. pestis, the author infected white mice with sublethal doses of pseudotuberculosis, pasterullosis, salmonellosis, erysipleoid and listeriosis cultures and after 3 weeks challenged the animals with different doses of a plague strain. Summarizing the results of these experiments, the author stated that as a rule the preliminary infection of the test animals with heterogeneous strains lowered their sensitivity to plague infection, as shown by an evaluation of the LD₅₀ and observations on the duration of the life of the animals after their challenge.

- 12) Timofeeva, L. A., Diagnostic of some bacterial infections in rodents and ectoparasites under field conditions. (Pp. 181-190.)

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The aim of the author was to furnish to the staffs engaged in plague or tularemia field work a guide for the recognition of listeriosis, salmonellosis, erysipeloid and pseudotuberculosis infections in rodents and ectoparasites. She recommended for this purpose the medium devised by Ravich-Birger and Meshalova (Laboratornoe delo, 1955 No. 1) and Lur'e (ibidem, No. 4), which contains glucose, lactose and urea, as modified by Golovacheva and Aparin (1957-no reference) by the substitution of bromthymolblue as indicator. The color changes produced in this initially green medium by the various bacterial species in point are set forth in the following table:

<u>Species</u>	<u>Color Changes in</u>		<u>Gas Formation</u>
	<u>Butt</u>	<u>Slant</u>	
<u>P. pestis</u>	Red-orange	Blue-green	-
<u>P. pseudotuberculosis</u>	Blue	Blue	-
<u>Salmonella</u>	Red-orange	Blue-green	+
<u>Erysipelothrix</u>	No change	No change	-
<u>Listerella</u>	Red-orange	Red-orange	-
<u>E. coli</u>	Red-orange	Red-orange	++

Timofeeva and Trofimenko (in Vol. XX of the Bulletin of the Irkutsk Anti-Plague Institute) described the preparation of this medium in dry form in which it is issued by the institute. Its use in the field is recommended by the present author. Dealing with the differentiation of P. pestis and the pseudotuberculosis bacillus she considered it

"as sufficient under field conditions for the recognition of P. pseudotuberculosis to study its morphology, appearance in gram-stained preparations, motility, colonial aspect on agar plates, growth characteristics on the above mentioned colored medium and behavior to plague and pseudotuberculosis phages."

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- 13) Klets, E. I. et al., Characterization of the immunizing properties of the dry combined vaccine against plague, tularemia and brucellosis. (Pp. 220-225.)

As the authors of this article, which will receive further consideration in Part II of the tularemia review now in preparation, concluded, the experimental evidence adduced indicated

"that the combined vaccine against plague, tularemia and brucellosis, tested on guinea-pigs, ... produced slight reactions and possessed a marked immunisatory efficacy, what permits its use for the simultaneous vaccination against plague tularemia and brucellosis."

- 14) Norov Dava, Use of hexachlorane aerosols for the fight against plague epizootics in the Mongolian People's Republic. (Pp. 351-355.)

As stated in the introduction to this article, the tarabagans, while the plague reservoir in Mongolia, are also most valuable animals because the trade in their furs is of great economical importance for the state as well as the population. It would be essential, therefore, to fight plague in Mongolia without destroying these marmots - a result, which could be achieved by eradicating their ectoparasites. For this reason it was decided to try the method of treating the tarabagan burrows with hexachlorane aerosols produced with the aid of the exhaust gases of a motor car, as recommended by Nekipelov and Zhovtyi (1955, 1957)^{1,2} and using for this purpose of an apparatus devised by Nekipelov.³

This method was actually used on a quite small scale (50 inhabited burrows) in April 1957 and on a somewhat larger scale in August of the same year in a raion where an active plague epizootic was present.

As shown in two tables, administration of 50 g hexachlorane per burrow led to a marked reduction of the flea infestation of tarabagans shot or trapped for the purpose of examination as well as to a considerable reduction of the flea population in the treated burrows. However, in September two plague-affected tarabagans were found within the treated area which had apparently moved in from the surrounding heavily infected region. Nevertheless the author maintained that

"The marked reduction of the flea incidence in the treated territories permits the expectation of a longer lasting epidemiological effect if larger or isolated areas are treated."

References

(1) Nekipelov, N. V. and Zhovtyi, I. F., A new method of fighting the fleas in rodent nests. Irkutsk State SRI. Tezisy dokladov konferentsii. Vypusk I (1955); (2) Idem: On the duration of the insecticidal effect of hexachlorane aerosols in tarabagan nests. Ibidem. Vypusk II (1957); (3) Nekipelov, N. V., Some methods of treating rodent burrows with gases. Bull. of SR Anti-Plague Institute, XV (1957).

- 15) Peshkov, B. I. and Zarubina, V. N., Hexachlorane-gassing of tarabagan burrows with the aid of a motorcar. (Pp. 356-363.)

Work analogous to that referred to in the foregoing review on a fairly isolated area of 300 hectares in the Borzia Raion of the Chita Oblast and described in detail in the present article led to the conclusion that

"The results of the work speak for a quite considerable lowering of the flea-indices on the animals, at the entrance of the burrows and in the nests. Comparative data, obtained from the treated and untreated territories indicate that the disinsection of tarabagan burrows with hexachlorane aerosols can be used in actual field work with the aim of sanitating the plague foci and preserving the tarabagan, a fur-bearing animal valuable for the national economy."

- 16) Khamaganov, S. A. and Shakurov, D. V., Poison-baits in the fight against domestic rodents. (Pp. 364-369.)
- 17) Domaradskii, I. V. et al., On the methods of preparing acid meat hydrolysates for the cultivation of P. pestis. (Pp. 370-373.)

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The technical details of these two articles must be studied in the originals or in full translations.

- 18) Kuriatnikova, V. N., Isolation of a tularemia strain from a tarabagan in the Borzia District of the Chita Oblast. (Pp. 128-130.)

As already referred to in the first part of the tularemia review, the author discovered for the first time the presence of this infection in a Siberian marmot. She emphasizes the need for further field observations as well as for laboratory studies to assess the susceptibility of this rodent to tularemia.

- 19) Antsiferov, M. I., Comparative evaluation of culture media for the bacteriological diagnosis of tularemia. (Pp. 148-177.)

The final conclusion reached by the author of this elaborate comparative study was that

"Egg-yolk agar as a highly sensitive medium for the cultivation of the tularemia bacillus deserves special attention (because) it is simple in preparation and economical in mass bacteriological examinations."

- 20) Makarov, N. I., To the history of the preparation of a live anti-tularemia vaccine by N. A. Gaiskii. (Pp. 374-378.)

This short note which does not lend itself to condensation, will receive attention in the second part of the tularemia review now in preparation.

- 21) Letov, G. S. et al., The water-rat in Tuva. (Pp. 298-303.)

Tuva is an autonomous oblast in the south of Siberia along the upper reaches of the Enisei River and on the border of Mongolia. As the authors found, the water-rats, though frequent in parts of this region, are not hunted for commercial purposes. The population has thus but accidental contact with these animals which cause great damage to the meadows used for hay production and the tree plantations. The potential danger of tularemia manifestations in the water-rats of the oblast implies the need for their further observation.

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- 22) Shkilev, V. V., Materials to the problem of the multiplication of field voles in the Primorskoi Krai (Far East). (Pp. 265-278.)
- 23) Filonov, K., On an interesting feature of the nutrition of the "black-capped" marmot (Marmota camtschatica doppelmaeri Bir.) in the Barguzin reserve (Buriat-Mongol ASSR). (Pp. 279-281.)
- 24) Tarasov, M. P., The long-tailed suslik (sisel) on the southern border of its habitat. (Pp. 282-291.)
- 25) Nekipelov, N. V., The nutrition of Ochotona daurica. (Pp. 292-297.)
- 26) Karnaukhova, N. G., Comparative fertility of the grey and black rats in the south of the Primor'e. (Pp. 304-313.)
- 27) Brom, I. P., Rodents - the carriers of infection in the zone of the water reservoir of the Irkutsk Hydroelectric Station. (Pp. 314-320.)
- 28) Pauller, O. F., On the hibernation of the long-tailed suslik and the conditions of the subsistence of fleas in its nests during the winter. (Pp. 334-339.)

The above enumerated articles, dealing with various ecological problems, are quoted by title only.

- 29) Kolesnik, R. S., Characterization of the immunisatory properties of the attenuated brucella strain 793. (Pp. 226-241.)

Summarizing the results of his elaborate investigations, the author stated that

"the resistance to brucellosis infection early produced in guinea-pigs after the (subcutaneous or cutaneous) immunization with the strain 793--isolated in 1933 from the fetus of a cow--either exceeds or approximately equals that in animals vaccinated with the BA strain.

Afterwards, regardless which strain is used, the resistance of the animals becomes lowered, but this is more noticeable in those immunized with the strain 793 than in the animals vaccinated with the BA strain.

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Taking account of the fact that the strain 793 is considerably attenuated and, used in average doses, is innocuous, and also noting its quite high immunizing properties early after inoculation, one may postulate that said strain could be used for the manufacture of bivalent* or polyvalent anti-brucellosis vaccines, and that it may even be recommended as a vaccine in the case of an urgent necessity."

- 30) Azarginova, F. S. and Rodd, V. A., Experience of producing a dry anti-cholera vaccine. (Pp. 131-134.)
- 31) Bezrukova, M. I. et al., To the elucidation of the causes of the lowering of the microbial concentration in the stock suspensions of the cholera vibrio. (Pp. 242-245.)
- 32) Kraminskii, V. A., To the history of cholera epidemics in China. (Pp. 3-18.)
- 33) Golovacheva, V. IA. and Zhovtyi, M. F., On the isolation of the causative organisms of some bacterial infections from mammalian ectoparasites in Southeast Transbaikalia and the Far East. (Pp. 135-147.)
- Examining 12 species of fleas as well as one louse and two tick species the authors were able to isolate the causative organisms of erysipeloid, pasteurellosis, salmonellosis and listeriosis as well as streptococcus and staphylococcus cultures.
- In their opinion rodent ectoparasites play an auxiliary role in the maintenance and spread of erysipeloid infection.
- 34) Emel'ianova, N. D., To the problem of the ectoparasites at the entrance of tarabagan burrows. (Pp. 321-326.)
- 35) Gershkovich, N. L., To the knowledge of the rodent-flea fauna in Kamchatka. (Pp. 327-330.)

* As added in a footnote, a combination of the two above mentioned strains would be advantageous in so far as the strain 793 confers an early and the BA strain a stable immunity.

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- 36) Sorkin, I. I. and Sychevskii, P. T., On the discovery of flea larvae in the fur of wild mammals. (Pp. 331-333.)
- 37) Pauller, O. F. and El'shanskaia, N. I., On the ability of the flea Ceratophyllus garei Roths. to migrate. (Pp. 340-342.)
- 38) Alifanov, V. I., A new instance of mass attacks of the chicken tick Dermanyssus gallinae De Geer on man in Siberia. (Pp. 346-347.)
- 39) Zhovtyi, I. F., New findings of the horse-fly Stomoxys calcitrans L. during autumn. (Pp. 348-350.)
- 40) Vasil'ev, G. I., Remarks on the flea Xenopsylla cheopis in the Primor'e. (Pp. 343-345.)

These six papers, dealing with parasitological problems, are quoted by title only.

As the author of this note concluded, X. cheopis needs for its development a higher temperature than that prevailing in the Primorskii Krai and perishes at temperatures below zero centigrade. Consequently this flea is met with there only in narrow microsites.

85. Matsegora, N. P., The ixodes ticks of the Alma-Ata focus of tick-borne encephalitis. Med. parazit. 31 (1962) 6:746-748. (From the Sanitary-Epidemiological Station of the Alma-Ata Oblast.)

As can be gathered from this short article, the existence of tick-borne encephalitis in the Alma-Ata Oblast has been known since 1935. The case incidence in the affected raions from 1953 to 1960 was 84 with a seasonal occurrence from May to August and an acme in June (47 cases).

An examination of 15,396 ticks collected at an altitude of 1,000 to 3,000 m showed the presence of Dermacentor marginatus (27.8%); D. pictus (24.4%); Ixodes persulcatus (21.5%); Haemaphysalis punctata (13.5%) and Hyalomma scupense (12.8%).

In the concluding paragraph of the article it is stated that

"If one compares the seasonal changes in the incidence of I. persulcatus, D. pictus and D. marginatus with the course of the morbidity

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of tick-borne encephalitis, one may conclude that I. persulcatus is of decisive importance in the conveyance of the infection in the Alma-Ata focus."

86. List of noteworthy articles quoted by title in the bibliography section of the journal Med. parazit. 31 (1962) 6:750-51.
- a. Belikova, N. P. and Natskii, K. V., Study of the action of DDT on fed male larvae of ixodes ticks. Trudy Vladivostokskogo nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigieny (Transactions of the Vladivostok SRI of Epidemiology, Microbiology and Hygiene). Collection 2 (1962) :123-126.
 - b. Obratnova, E. A. and Tatarinova, L. G., Some data on the serum prophylaxis of tick-borne encephalitis in the Chuguevskii Raion of the Primorskii Krai. Ibidem: 22-24.
 - c. Slonov, N. M., Zoological-parasitological characterization of the natural focus of tick-borne encephalitis in the middle Primor'e. Ibidem: 27-32.
 - d. Galant, I. B., To the problem of the Far-Eastern tick-borne encephalitis of alimentary origin. Tezisy i avtoreferaty dokladov na konferentsii psikhonevrologicheskoi bolnitsy No. 1...v 1960 i 1961 (Topics and Authors' Abstracts of Addresses at the Conference of Psychoneurological Hospital No. 1...in 1960 and 1961). Ussuriisk (1962) 8-11.
 - e. Galant and Grebennikov, V. S., On the specificity of the nervous-psychic syndromes in tick-borne and mosquito-borne (Japanese) encephalitis. Ibidem: 5-6.
 - f. Galant, I. B. and Rumiantsev, N. P., On the chronic progressive course of tick-borne encephalitis. Ibidem: 7.
 - g. Gusev, V. M. et al., The role of birds in the transport of ticks and fleas (according to materials from the Azerbaidzhan SSR). Zool. zhur. 41 (1962) 6: 905-911.

- h. Korenberg, E. I., Role of birds in feeding the ixodes ticks in the natural encephalitis foci of the forest zone. Ibidem 8:1220-1225.
- i. Kulakova, Z. G., On the role of fleas in the circulation of the virus of tick-borne encephalitis. Biulleten Moskovskogo obshestva ispytatelei prirody. Otdel biologogicheskii (Bulletin of the Moscow Society of Naturalists. Division of Biology, 1962). (1962) 4:144-145.
- j. Simkin, G. N., On geographical changes in the dynamics of the frequency of the tick Ixodes persulcatus. Ibidem: 144-145 (?).
- k. Kurchatov, V. I. et al., Experience in the fight against ixodes ticks on the pastures of the Krasnodar Krai with the airplane-chemical method. Trudy Krasnodarskoi nauchnoi-issledovatel'skoi veterinarnoi stantsii (Transactions of the Krasnodar SR Veterinary Station). 2 (1961) :65-74.
- l. Smetanina, M. A., Experience of the fight against ixodes ticks, the vectors of spring-summer tick-borne encephalitis. Kazan. med. zhur. (1962) 3: 5-8.
- m. Chueva, S. V., Spring-summer tick encephalitis in the TASSR (Tatarskaia ASSR). Ibidem: 3-5.
- n. Iakobson, N. Z., Treatment of a locality with diminished doses of chemical poisons for a campaign against ixodes ticks. Voенno-med. zhur. (1962) 7: 50-51.
87. Reviews of important articles in Volume 18 (1961) of Trudy Rostovskogo-na Donu gosudarstvennogo nauchno-issledovatel'skogo protivochumnogo instituta (Rostov-on-Don State SR Anti-Plague Institute).
- 1) Levi, M. I. et al., A new variety of the plague bacillus. (Pp. 3-23.)

The conclusions reached in this article, the important text of which does not lend itself to the purposes of a brief review, were:

1. During the recent years acute epizootics have been recorded in the Armenian SSR and in the Mongolian People's Republic among various species

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of voles and the plague strains isolated showed a striking similarity in regard (to their reactions) to glycerol, nitrates, rhamnose and urea and also a weak virulence for guinea-pigs.

2. The strain 1260, isolated in 1959 in the Armenian SSR, was subjected to a detailed study in experiments on some wild and laboratory animals, in the course of which a number of differences was observed between this strain and strains isolated from other rodents. Used for subcutaneous infection, the strain proved little pathogenic for midday gerbils, small susliks (sisels), guinea-pigs and white rats, but showed a high virulence for white mice and common voles, in which in some instances a prolonged bacteremia appeared.

3. There are sufficient grounds for the recognition of the independency of a vole variety of P. pestis. A classification of the varieties of this organism is proposed.

4. Apparently some vole species play a role as fundamental carriers of P. pestis and, together with their fleas, are capable under favorable conditions to maintain its multiplication and development through innumerable generations.

(An adequate reference list enhances the value of this report.)

- 2) Shtelman, A. I., Experimental study of the mechanism of plague transmission among the midday and tamarisk gerbils of the Volga-Ural interfluvial region. Report II. On the infectivity of the fleas on plague infected midday and tamarisk gerbils. (Pp. 24-29. (The unavailable first report of this series was published in the second issue of Trudy Astrakhanskoi protivochumnoi stantsii, 1955.)

The conclusions reached through this study were that

1. The tamarisk and partly also the midday gerbils, in which under experimental conditions one observes a generalized type of plague with a marked bacteremia during the agonal period, are apt to serve as source of the infection for the fleas infesting them.

2. The fleas became successfully infected on the midday gerbils in 30%, and on the tamarisk gerbils in 70% of all tests. This is in full agreement with our observations on the degree and frequency of bacteremia in these two species, although in the case of the tamarisk gerbils the percentage ought possibly to be somewhat higher.

3. The fleas of the gerbils (Xenopsylla conformis, Nosopsyllus laeviceps and Coptopsylla lamellifer) and also the flea of the yellow suslik Oropsylla ilovaiskii under experimental conditions are capable of contracting plague on both species of gerbils.

- 3) Karpuzidi, K. S. et al., A search for means of improving the biological method of plague diagnosis. (Pp. 30-37.)

Parallel tests made by the authors in white mice and guinea-pigs which had been treated with X-rays or with cortisone before experimental plague infection, clearly showed the superiority of the latter method. For, as the authors concluded

"animal tests in white mice treated with cortisone according to the method of M. P. Pokrovskaia permitted to shorten the isolation of plague bacilli from slightly infected materials to 2 days. It was established that in the cortisone-treated mice the accumulation of a large amount of plague bacilli results more rapidly. This increases the importance of the microscopic examination of impression films from the organs of test animals which succumbed or were sacrificed on the third day after infection."

The cortisone dose used by the authors 4 hours before the infection of the test mice was 8 mg.

- 4) Gurleva, G. G., Incomplete antibodies in the blood sera of plague-vaccinated and infected animals. (Pp. 38-44.)

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Referring to an unavailable publication in volume XVII (1960) of the Transactions of the Rostov Anti-Plague Institute, in the introduction of the present article the author stated that

"The incomplete antibodies were obtained with the aid of centrifugation (2,500 rev./minute) for 15 minutes of the contents of the tubes in which the agglutination reaction had been negative. The degree of the reaction was assessed in dependence upon the transparency of the fluid and the dimensions of the deposit.

As titer of the agglutinins and the incomplete antibodies was considered the serum dilution in which one could observe a ++ or higher agglutination."

Summarizing the results of her observations, the author stated that

- "1. We showed experimentally the presence of incomplete antibodies in different animal species (small sisels, guinea-pigs, white rats and mice) either after their one-time infection with the virulent P. pestis culture 280 or as a result of inoculation with the live dry anti-plague vaccine 1-17.
2. The agglutination reaction for the detection of incomplete antibodies was more sensitive than the usual agglutination reaction. The incomplete antibodies could be observed in the blood sera of the animals more frequently and not rarely earlier than the agglutinins. The titers of the incomplete antibodies were for 3-5 dilutions higher than those of the agglutinins.
3. The incomplete antibodies remain longer in the sera of the vaccinated or infected animals than the agglutinins (limit of observation 49 days).

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Still, as shown by our data, the best time for the detection of the incomplete antibodies, and also of the agglutinins, is the 20th day after vaccination or infection."

- 5) Shiraiev, D. T. et al., The susceptibility ("infectious sensitivity") of water-rats to plague. (Pp. 45-46.)

The water-rats were found to be highly susceptible to plague infection to which they rapidly succumbed.

- 6) Tinker, I. S., Fight against the fleas of rodents living in contact with man ("synanthropic" rodents) as a radical means for plague prophylaxis in towns. (Pp. 47-52.)

Quoting both Soviet and non-Soviet observers, the author stressed the great value of the modern insecticides in the fight against the fleas of rodents under urban conditions.

- 7) Maloletkov, I. S., The world-wide distribution of quarantinable diseases and the tasks of the sanitary-prophylactic organizations of the Soviet Union. (Pp. 53-55.)

The author tabulates the data on the recent incidence of plague, cholera and smallpox in the various parts of the world in order to emphasize the necessity for strict quarantine measures in the Soviet Union.

- 8) Palov, N. V. and IAtsenko, A. V., Experience of the work on the sanitary protection of the frontiers in the ports of the Black Sea and the Sea of Azov. (Pp. 62-66.)

Giving a brief description of the quarantine work in the ports mentioned in the title, the authors stated that it has proven much more easy to deratize the vessels than to disinsect them. Hydrocyanic acid compounds, like the cyclon discoids produced in Czechoslovakia and recently also a Soviet-produced brom-methyl compound proved fully satisfactory for the former purpose; DDT and hexachlorane, alone available for the disinsectization of the vessels, were little effective against cockroaches and moreover inconvenient to apply in ships with large lacquered surfaces.

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- 9) Shiranovich, P. I., Current problems of the study of fleas in connection with the tasks of sanitating the natural plague foci. (Pp. 67-71.)

In this article, which does not lend itself to a condensation, the author emphasized the necessity for further research work, to be conducted with modern methods, e.g. with the aid of radio-active isotopes.

- 10) Bykov, L. T. et al., On the role of the tick Rhipicephalus schulzei Ol. in the natural plague foci. (Pp. 72-77.)

The main conclusions reached by the author were that

(a) A prolonged presence of P. pestis in the ticks does not lower the virulence of P. pestis. The organisms also remained virulent after the metamorphosis of the nymphs into the imago and after a persistence in the adult females for 76 days.

(b) In view of the high susceptibility of Rh. schulzei to plague a bacteriological examination of these ticks is indicated in the enzootic foci.

- 11) Shiranovich, P. I. et al., Experience of a study of plague epizootics in elementary populations of the big gerbil. (Pp. 78-87.)

In the course of their investigations, for the detailed results of which the original or a translation must be consulted, the authors found no evidence for the existence of strictly localized and persistent "elementary" plague foci postulated by Naumov and his school. They shared, therefore, the view of many other Soviet workers that a constant shifting of the scene of plague manifestations among the wild rodents was responsible for the persistence of the infection in large enzootic areas.

- 12) Mironov, N. P. et al., Probability of the observation of plague-infected animals during epizootics with a different degree of intensity. (Pp. 88-94.)

As stated in the concluding paragraphs of this article,

"preliminary investigations undertaken under different landscape-geographical conditions show that the number of rodents usually obtained for the plague laboratories from each epizootological 'point' can in no way serve as an indicator for the presence or absence of smouldering microfoci or slowly progressing epizootics in the plague foci. The evidence adduced above permits the conclusion that in order to reach this goal it is indispensable to obtain not less than 4% of the total number of the rodents inhabiting the 'point' in question.

Experimental observations on rodents as well as on their fleas in this respect must be continued on a larger scale."

- 13) Gromov, I. M. and Fokanov, V. A., To the history of the formation of the rodent fauna in the Mangyshlak and Priembensk semideserts. (Pp. 95-103.)

Quoted by title only.

- 14) Barkov, I. P., To the problem of the epidemiology of plague in the Mongolian People's Republic. (Pp. 104-111.)

As can be gathered from the text of this article, during the period from 1926 to 1953 a total of 147 plague outbreaks were recorded in the Mongolian People's Republic, 36 of them taking place from 1951-1953. The human infections were mostly contracted through hunting of the Siberian marmots (tarabagans) or contact with their carcasses. Practically all outbreaks occurred from July to October with an acme in August. Bubonic attacks were prevalent (83.3%). No mention is made of an occurrence of the pneumonic form of plague.

The conclusions reached by the author were that

1. The plague-enzootic territory in the Mongolian People's Republic occupies wide areas of the high mountain belt, mainly the south-western slopes of the Khangai and Khentei, the raions of the Mongolian and Gobi Altai and, in the south and south-east of the country, desert steppes.

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2. The seasonal incidence of plague is closely related to the tarabagan epizootics.
3. The main sources of the initial attacks among the population of the mountain-steppe focus are the hunting of the tarabagans and sisels and accidental contacts with the former rodents.
4. The role of the ectoparasites (rodent-fleas) as vectors of the infection from the rodents to man is probably slight, since Oropsylla silantiewi, the specific tarabagan flea, shows an extraordinary tendency to stick to its host and to the nests of the latter. This is confirmed by the prevalence of axillary buboes in man and by the coincidence of the plague and mass hunting seasons.
5. The following plague-prophylactic measures are indispensable:

- a) To shift the hunting season to spring, when the epizootics are not yet rampant;
- b) To entrust the hunting of the tarabagans and sisels and the handling of their skins to special brigades working under medical observation;
- c) To carry out mass anti-plague vaccination of the population in combination with public health propaganda.

- 15) Makarovskaia, L. N. and Aleshina, E. N., Therapeutic activity of penicillin in combination with other antibiotics in the experimental plague of white mice. (Pp. 112-116.)

The conclusions reached in this article, the protocols of which must be studied in the original, were that

1. Administration of penicillin to white mice infected with streptomycin-sensitive and streptomycin-fast plague strains gave a definite therapeutic effect under experimental conditions.
2. An increase of the therapeutic efficacy of penicillin was observed in the case of its use in combination with streptomycin for white mice infected with plague strains sensitive to the latter drug.

3. The use of penicillin in combination with oxy-tetracycline proved highly efficacious in the case of white mice experimentally infected with streptomycin-fast plague strains.

- 16) Trubchaninova, O. N., To the pathomorphology of experimental pneumonic plague, treated with streptomycin. (Pp. 117-124.)

The conclusions drawn from this investigation, for the detailed results of which the original or a full translation must be consulted, were that

"1. As a result of streptomycin treatment of primary pneumonic plague, caused by intrapulmonary infection, the number of plague bacilli first becomes markedly reduced and then the organisms disappear altogether. In the center of the affected foci there develops a necrosis of the tissue and of the exudate cells, around which a wall of leucocytes is rapidly formed. In the peripheral part one observes a proliferation of the connective tissue cells of the alveolar partitions, which replace the necrotic tissue with a subsequent scar formation; rarely does the formation of a cavity in the center of the affected focus result.

2. Treatment commenced late is incapable of exerting an influence on the morphology of the process.

3. An insufficient dosage of the antibiotic may result in the development of a protracted form of plague with a purulent liquefaction of the lung tissue and an intensification of the infection after the termination of the treatment."

- 17) Tinker, I. S. and Gulida, M. M., Influence of antibiotics on the formation of an insusceptibility of guinea-pigs after simultaneous infection with P. pestis and inoculation with live anti-plague vaccine. (Pp. 125-129.)

The important conclusion reached by the authors was that

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"If a preventive treatment of plague with antibiotics is indicated, there is no reason for a simultaneous specific prophylaxis with live anti-plague vaccine, because in the case of such a combination only a slight insusceptibility develops under the action of the antibiotics. If the implementation of an 'urgent' (emergency) prophylaxis against plague is indispensable, in the first line one must use the efficacious antibiotics according to the scheme recommended for preventive therapy and only after an interval sufficient for the full disappearance of the antibiotics from the body is it possible to administer inoculations with live anti-plague vaccine."

- 18) Mokhin, K. M., The functional state of the nervous system in plague. Report I. Investigation of the bio-electric activity of the brain cortex in plague intoxication of guinea-pigs. (Pp. 130-139.)

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

- "1. Plague intoxication of guinea-pigs results in a disturbance of the nervous activity, one of the manifestations of which is a considerable change in the bio-electric activity of the cerebral cortex.
2. The changes of the bio-electric activity of the brain already appear during the first minutes after the parenteral administration of the toxic substances of P. pestis (i.e. a suspension of the vaccinal strain 1-17 heated for two hours at 60°C) and precede changes in the respiration and temperature.
3. During the first period of intoxication after the parenteral administration of the toxin one observes a short activation of the bio-potentials, afterwards their prolonged depression.

4. Intravenous administration of the plague toxin leads to more marked and prolonged changes of the bio-currents of the brain than subcutaneous injection."

- 19) Kiseleva, I. E., To the problem of the state of the hemato-encephalic barrier in plague. (Pp. 140-145.)

The conclusions of the author were that

"1. In the process of the development of plague infection in guinea-pigs one could not observe a break in the permeability of the hemato-encephalic barrier in respect to trypan blue, congo red and sodium ferrocyanate.

2. Sometimes one could observe a break of the barrier in respect to the above mentioned substances, but this was the case only in the agonal period of plague."

- 20) Kolesnikova, L. I. et al., To the problem of perfecting the technology of manufacture of the live dry anti-plague vaccine. (Pp. 146-150.)

As the authors discovered, it was permissible to keep the initial suspensions (washings from the cultures) before filling into ampoules for four days in the refrigerator at a temperature of 4^o-6^oC. This gave an opportunity for a more prolonged bacteriological control of the brews.

- 21) Ovanesova, N. G. and Kirdeev, V. K., Regime of drying the anti-plague vaccine (strains 1-17) in the Czechoslovak chamber apparatus KC-6. (Pp. 151-155.)

The highly technical statements of this article have to be studied in the original or a translation.

- 22) Kharitonova, T. I., Isolation of active fractions of the brucella Vi-serum. (Pp. 156-170.)

Summarizing her results, the author stated that

1. The protein components of brucellosis Vi and Vi+0 sera obtained with the aid of electrophoresis were subjected to a study.

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2. In vitro tests showed that the gamma-globulins, in concentrations of 0.1, 1 and 10% are capable of suppressing the growth of the brucellae. The beta-globulins exert a bacteriostatic action only in a concentration of 10%. The alpha-globulins and the albumins are bacteriologically inert.

3. Agglutination and precipitation tests made with brucella antigens and various dilutions of the protein fractions showed that the antibrucella agglutinins and precipitins are contained in the gamma-globulin fractions.

4. The protective properties of the brucellosis Vi-sera are vested in the gamma-globulins. The beta-globulins are inert in this respect.

5. Attention ought to be concentrated, therefore, upon the use of the gamma-globulins of the anti-brucellosis Vi-serum for the purposes of emergency prophylaxis and treatment.

- 23) Uraleva, V. S. et al., The use of fluorescent antibodies for the detection of brucellae in the extrinsic environment and in animals. (Experimental data.) (Pp. 171-187.)

The concluding sentence of this article reads:

"Thus the method of fluorescent antibodies in brucellosis work has been found to be specific and highly sensitive, permitting the establishment of the presence of the causative organisms in a comparatively short time (1-1.5 hours after commencement of the examination)."

- 24) Drozhevkina, M. S. et al., A study on the suitability of using irradiated animals for an accelerated bacteriological diagnosis of brucellosis. (Pp. 188-195.)

The use of irradiated animals for the laboratory diagnosis of brucellosis offered no marked advantages.

- 25) Balandin, G. A., To the methodology of using Wright's (agglutination) reaction. (Pp. 196-199.)

The technical details of this note must be studied in the original or in a translation.

- 26) Balandin, G. A. and Prostetova, N. P., On the intensity of the immunity resulting from anti-brucellosis vaccine in relation to the method and the number of the inoculations. I. Peculiarities of vaccinal brucellosis infection in guinea-pigs in relation to the method and number of inoculations with live brucellae of the vaccinal strain Br. abortus 19-BA. (Pp. 200-205.)

Concluding their text, the authors stated that according to their findings

"in guinea-pigs, subcutaneously and cutaneously inoculated with live brucellae of the vaccinal strain Br. abortus 19-BA, a sterile immunity develops more completely after epidermal application of the organisms and after two inoculations made with an interval of 20-30 days."

- 27) Chernenkova, N. A. et al., Immunological reactivity and epidemiological efficacy of cutaneous anti-brucellosis vaccination with the aid of the dry live vaccine prepared from strain 19 by the Kashintsev Bio-factory (biofabrika). (Pp. 206-214.)

Observations of the authors showed that

1. The vaccine of the Kashintsev biofabrika produces slight reactions with some of those inoculated showing an insignificant local and general reaction which does not impair their working capacity.

2. The reactions in the vaccinated persons did not depend upon the degree of severity of past brucellosis attacks or the character and degree of the immunological reactivity before inoculation.

3. The vaccine in point is immunogenic: after cutaneous inoculation positive serological reactions appear in 67.3-100% of the inoculated in 2-4 weeks and last for 6 months in 67.3-70.9% and for 12 months in 36.9-66% of the vaccinated persons.

Positive allergic reactions were observed one month after vaccination in 32.9-52.9%; after 6 months in 43.2-61.8%; after 12 months in 32.3-72.4% of the immunized persons.

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4. Cutaneous revaccination with the vaccine of the factory also stimulates the immunological reactions. One month after the revaccination of an already vaccinated group of people engaged in the slaughtering of brucellosis-affected cattle and sheep the number of persons with positive serological reactions increased more than two times in comparison with the period before revaccination.

5. The cutaneous inoculation with the vaccine of the Kashintsev factory ensured the maintenance of positive serologo-allergic reactions for 6 months after the immunization, while the subcutaneous administration of the IEM vaccine of the USSR Academy of Medical Sciences ensured the maintenance of these reactions in only 35% of an analogous group.

6. The vaccine of the factory proved epidemiologically effective. Its use in 1959 lowered the brucellosis morbidity in the Rostov Oblast to 41% of the incidence of the disease recorded in 1958.

7. The vaccine of the factory, while not less innocuous, immunogenic and epidemiologically effective than the subcutaneously administered IEM vaccine, can be used in a more simple and convenient manner.

- 28) Uraleva, V. S., Influence of the treatment with antibiotics on the vitamin B₂ content in the organs of experimentally infected animals. (Pp. 215-222.)

Quoted by title only.

- 29) Poliakov, I. I., Influence of cortisone on the course of experimental brucellosis. (Pp. 223-231.)

Elaborate observations led the author to the following conclusions:

1. The body temperature of brucellosis-infected guinea-pigs fell rapidly to normal under the influence of cortisone, but 1-2 days after administration of the preparation had been stopped, it rose partly and retained a high level for 3-7 days. Afterwards the temperature of the test animals did not differ from that of the controls.

2. Administration of cortisone for 6 days during all periods of the brucellosis infection did not

exert an influence on the agglutinin titer and the opsono-phagocytic activity of the leucocytes; 11 days administration of cortisone lowered the agglutinin titer.

3. The allergic reactivity of the skin during all periods of the brucellosis infection becomes markedly suppressed under the influence of cortisone.

4. Cortisone administration (especially for 11 days) leads to a decrease of the dimensions of the lymphatic nodules in the spleen. Still, after the administration of the preparation has been stopped, after a little while (7-30 days) the nodules differ little in size from those in the control animals.

5. Cortisone administration for a period of 6-11 days to guinea-pigs 24-30 days after they had been infected with small doses of Br. melitensis increases the abundance of the organisms in the animals. Administration of the preparation 40 days after infection exerts no influence in this respect. Given 225 days after the infection, cortisone produces a decrease of the brucellae in the body of the test animals or even sterilization.

- 30) Somova, A. G., Mutability of the cholera vibrio under the influence of terramycin and bacteriophage. (Pp. 232-244.)

Quoted by title only.

- 31) Gur'ianova, L. I. et al., The vibrios of the Neva River and the water basins of the Leningrad mercantile seaport. (Pp. 245-251.)

Quoted by title only.

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88. Reviews of important articles in Volume 16 (1959) of Trudy Rostovskogo-na-Donu gosudarstvennogo nauchno-issledovatel'skogo protivochumnogo instituta (Transactions of the Rostov-on-Don State SR Anti-Plague Institute).

- 1) Aleshina, E. N. et al., Therapy of experimental plague caused by streptomycin-fast forms of P. pestis with bacteriomycin and mycerin. (Pp. 3-11.)

As was to be expected, the authors found that streptomycin treatment of guinea-pigs which had been infected with a streptomycin-fast plague strain was unsuccessful. Good results were obtained, however, when such animals were treated daily for 7 days with intramuscularly administered 25 mg doses of bacteriomycin or mycerin--even if treatment was started late. Mycerin proved to be somewhat less effective than bacteriomycin.

- 2) Tinker, I. S. et al., Curative action of a combination of antibiotics in experimental plague caused by streptomycin-fast forms of P. pestis. (Pp. 13-19.)

The authors concluded their article by stating that treatment with streptomycin alone of white mice infected with streptomycin-fast plague bacilli is not successful. Combination of this antibiotic with biomycin improves the therapeutic results whereas the opposite is the case when bacteriomycin is used together with streptomycin. Combined treatment of the test animals with biomycin and bacteriomycin proved satisfactory.

- 3) Trubchaninova, O. N., Pathomorphology of experimental plague under treatment with streptomycin. Report I. On the problem of the forms of plague caused by conjunctival infection. (Pp. 19-25.)

As the author found, conjunctival infection of guinea-pigs with P. pestis produced an ocular-bubonic form of plague followed by septicemia and a secondary affection of the lungs. None of her test animals showed the features of primary pneumonic plague.

- 4) Trubchaninova, O. N., Pathomorphology of experimental plague under streptomycin treatment. Report II. The pathomorphology of experimental plague caused by conjunctival infection and treated with streptomycin. (Pp. 27-31.)

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For her study the author used conjunctivally infected guinea-pigs which for 12 days from the second day after infection received daily 25,000 units of streptomycin. She then systematically sacrificed the test animals for the purpose of examination daily for the first week after infection, and during the successive five weeks at intervals of 2-3 days. A study of the original publication or a translation is necessary to evaluate the results thus obtained.

- 5) Adimov, L. B., Protracted forms of plague in laboratory animals. Report II. The virulence of the causative organisms in protracted forms of plague. (Pp. 33-35.)

The author of this brief note stated, without giving a reference to his first communication or details regarding the methods of infection used, that he studied the virulence of plague bacilli which persisted for a long time in white rats and mice and in guinea-pigs. A total of 444 various laboratory animals was used to determine the virulence of these strains; for this purpose white mice and guinea-pigs were subcutaneously infected with graded doses ranging from 1 to 1,000 organisms; white rats with doses varying from 100 to 100,000 organisms. The results of this study were set forth in the following table:

Size of the LD₅₀ of the subcultures of the P. pestis strain 773, isolated from animals with protracted forms of plague.

<u>Description of the Strain</u>	<u>Size of LD₅₀ (Number of Organisms)</u>		
	<u>White Mice</u>	<u>Guinea-Pigs</u>	<u>White Rats</u>
Original strain	51	5	71,300
Strain from a liver abscess of a white rat killed 46 days after infection	24	7	61,300
Strain from an abscess in the bubo of a white rat killed 62 days after infection	56	10	10,000
Strain from the blood of a guinea-pig which died on the 37th day after infection	4	3	9,100

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<u>Description of the Strains</u>	<u>Size of LD₅₀ (Number of Organisms)</u>		
	<u>White Mice</u>	<u>Guinea-Pigs</u>	<u>White Rats</u>
Strain from an abscess at the site of infection of a guinea-pig sacrificed 55 days after infection	6	5	66,100
Strain from the necrotic tissue at the site of infection of a white mouse sacrificed 30 days after infection	2	10	42,200

Commenting upon these findings, the author stated that

"all subcultures of the plague bacillus, obtained after a considerable time from animals with protracted forms of plague showed no lowering of the initial virulence. This remained high not only for the animal species in which the plague bacillus persisted for a long time, but also for other species. The oscillations of the virulence, mainly on the side of an increase, which can be perceived easily in the table, can be explained by the unavoidable absence of standard conditions in biological tests of this type as well as by some increase of the virulence of the original strain through the passages in the course of the work."

- 6) Adimov, L. B., Protracted forms of plague in laboratory animals. Report III. On the resistance of white rats to repeated infection. (Pp. 37-42.)

The author experimented upon 50 adult white rats, 30 of which had survived for 25-71 days after infection with the plague strain 773, while 10 had been inoculated with the live plague vaccine 1-17 and 10 served as controls. For re-infection of the animals as well as for the initial infection of the vaccinated and control rats a streptomycin-resistant variant of the strain 773 was used.

Commenting upon the results of these tests, the author stated that

"in the white rats surviving after infection with P. pestis in a dose equal or near to the LD₅₀, a specific infectious process was set up, as a result of which the resistance of the animals to a re-infection became increased. As proof one may adduce the high rate of survival in the animals succumbing to the re-infection, the slight morbid changes in organs and tissues or the scanty presence of the organisms.

Thus, out of 30 white rats re-infected with 10 DCL (certainly lethal doses) or 200 DCL 21 survived, while 9 of the 10 controls succumbed. The mean length of life in the animals which succumbed to the re-infection was 11.9 days as against 3.3 days in the controls. Out of the 10 vaccinated rats, 3 died after a mean survival period of 4.3 days.

Nevertheless, in two white rats which succumbed on the 9th and 10th day after revaccination respectively, a severe secondary involvement of the lungs was noted. It seemed remarkable that out of the animals succumbing to the re-infection only these two rats showed a pre-agonal bacteremia with an abundance of the organisms in the blood.

The use of a labelled (streptomycin-fast) strain rendered it possible to establish that five rats overcame a superinfection with small or large doses of plague bacilli.

Moreover in three rats re-infection with the labelled strain produced protracted forms of plague which appeared on the basis of a specific immunity. The plague bacillus persisted in these animals for 24 days (limit of observation) in encapsulated abscesses at the site of infection."

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The formal conclusions of the author were that

1. White rats infected with LD₅₀ doses of plague bacilli showed 25-71 days after the infection (limit of observation) a comparative resistance to re-infection with small (10 DCL) as well as with large (200 DCL) doses of *P. pestis*. The intensity of their immunity was somewhat higher than that produced by inoculation with the live plague vaccine 1-17 in a dose of 500 million organisms.

2. In those rats which succumbed to the re-infection, one found little marked morbid changes and a quite scanty presence of plague bacilli in the organs. An exception was noted in two rats which showed secondary lung involvement and a marked pre-agonal bacteremia.

3. In the protracted forms of plague the superinfection did not lead to a disappearance of the causative organisms producing the primary infection. On the contrary the re-infection sometimes led to the appearance of protracted forms of plague caused by the organisms used for the second infection.

- 7) Khakhina, Z. D., To the pathomorphology of protracted forms of plague in experimental animals. (Pp. 43-52.)

The conclusions reached in this article, which ought to be studied in detail by those interested in the morbid anatomy of plague, were as follows:

Protracted forms of plague in guinea-pigs treated with small doses of antibiotics* and in naturally resistant rats, though pathogenetically different; show considerable similarities in their morphogenesis.

Characteristic for the protracted forms of plague are encapsulated foci at the site of infection and in the internal organs forming in areolas of necrosis, which contain plague bacilli and show a marked tendency to suppuration.

* To judge from this statement, apparently small doses of antibiotics were used to produce protracted forms of plague in guinea-pigs.

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The prolonged persistence of the plague bacilli in the encapsulated foci creates under suitable conditions the possibility of a recrudescence of the infectious process. Characteristic of such generalizations of the infection is a frequent and marked lung involvement.

- 8) Mokhin, K. M., The functional state of the blood vessels in experimental plague. (Pp. 53-61.)

The conclusions reached in this article, which also deserves a detailed study, were that

1. The vessels of the isolated ear of experimentally plague-infected rabbits respond with adequate reactions to the action of vasodilating and vasoconstricting substances. However, the intensity of these reactions is below that in normal animals.

2. In contrast to these observations, the blood vessels of the kidney of plague-infected rabbits either do not respond at all to the above mentioned stimuli or show only a weak protracted reaction.

3. In experimentally infected rabbits one can often observe a marked increase of the amount of Ringer-Locke solution voided from the isolated kidney. This may be taken as a sign of a lowered tonus and of a dilatation of the vessels.

4. Parallel observations of the functional state of the blood vessels of the isolated organs and of the electrocardiograms of the infected rabbits indicated that the changes in the kidney vessels appear earlier than disturbances of the cardiac activity.

5. The functional involvement of the vessels in the internal organs, as demonstrated in the case of the isolated kidney, is of great importance for the development of circulatory disturbances in plague.

- 9) Kiseleva, I. E., Contributions to the knowledge on the mechanism of hemorrhages in plague. Report II. On the resistance of the capillaries in experimental plague. (Pp. 63-70.)

(The first article of this series was published under the subtitle "State of the factors of blood coagulation in plague" in Volume XV, Installment 1 [1959] of the Transactions of Rostov Anti-Plague Institute.)

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The author concluded her article by stating that according to the findings recorded in her present article, and in the one quoted above, alterations of the vessels play a decisive role in the genesis of the hemorrhages observed in plague-infected animals. In her opinion,

"The mechanism of this alteration is quite involved and apparently related to changes of the neuro-hormonal regulation (of the blood circulation). It presents one of the manifestations of the neuro-dystrophic alterations appearing in the body as a result of the infectious process."

Changes in the mechanism of blood coagulation evidently also play a role in the pathogenesis of the hemorrhagic syndrome of plague.

An adequate reference list, quoting non-Soviet as well as Soviet authors, is added to the article.

- 10) Pustovalov, V. L. and Karpuzidi, K. D., Study of the growth stimulator of P. pestis, isolated from the sarcine lysates (kormilki). (Pp. 78-79.)

As described in this article, the authors devised a method of purifying the growth stimulator of P. pestis through fractionation of the lysate of yellow sarcines with ethyl alcohol and also a procedure for the quantitative assessment of the stimulator in the lysates. The active fraction of the growth stimulator was apparently a glucoproteid.

- 11) Zaplatina, S. I. et al., The use of casein hydrolysate media for the production of dry live plague vaccine (strains 1 and 17). (Pp. 81-87.)

Casein hydrolysate media proved fully satisfactory for the manufacture of live plague vaccine. This is in accord with the findings of Indian observers quoted by the authors.

- 12) Sagatovskii, V. N. and Kirdeev, V. K., A simple apparatus for drying live plague and tularemia vaccines. (Pp. 89-95.)

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The authors of this illustrated article, the technical details of which must be studied in the original or in a translation, described a simple apparatus for the drying of plague and tularemia vaccines. In the case of emergencies this can be put together with locally available materials.

- 13) Zaplatina, S. I. and Khokhlova, A. M., On the immunological relationship of P. pestis and P. pseudotuberculosis. (Pp. 97-104.)

Summarizing the results of their observations, set forth in the text of their report and in five tables, the authors stated the following:

"We confirmed the presence of common immunogens in P. pestis and P. pseudotuberculosis through single immunizations of guinea-pigs with live avirulent pseudotuberculosis cultures and subsequent challenge (of the animals) with massive doses of virulent plague cultures. There exists a relation between the intensity of the immunity and the size of the vaccine dose. It has to be emphasized that a small dose equal to 100,000 organisms of the pseudotuberculosis strain 496 ensured an almost complete survival of the challenged guinea-pigs. It is necessary to note in this connection that the minimal immunizing doses of the vaccinal strains of P. pestis presently used for tests on guinea-pigs under analogous conditions vary from 100,000 to 1 million organisms. We detected marked differences in the immunogenicity of the various pseudotuberculosis strains tested. These differences were particularly noticeable in tests on guinea-pigs. The differences in the cultures tested can explain the markedly divergent results obtained by Zlatogorov in cooperation with Mogilevskaia (see Zlatogorov, Studies on microorganisms, Petrograd, 1918) and Mac-Conkey (J. of Hyg. 8 [1908] No. 3).

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White mice immunized with P. pseudotuberculosis proved to be insufficiently protected against plague, this was probably related to the absence in this organism of an antigen analogous to the Fraction A of P. pestis, which is of fundamental importance for the production of an immunity in white mice. After challenge with small doses (20 DLM) of a virulent plague strain, protracted forms of plague were observed in white mice immunized with the pseudotuberculosis strain 496.

The pseudotuberculosis strains used for the present study exhibited different degrees of immunity in white rats. Immunization with the pseudotuberculosis strain 496 protected rats not less effectively than the EV vaccine. The pseudotuberculosis strain 5 was only weakly immunogenic.

Protracted forms of plague became apparent in part of the white rats which had been immunized with the EV strain and had survived challenge with 100 DLM of a virulent plague strain."

A reference list quoting 3 Soviet observers and 5 Western authors is added to the article.

- 14) Andreeva, A. P. et al., Study of the behavior of the pseudotuberculosis cultures isolated in Leningrad on the differential medium proposed by the Irkutsk (Anti-plague) Institute. (Pp. 105-108.)

As stated in the concluding paragraphs of this article, the solid colored medium proposed by workers of the Irkutsk Anti-plague Institute (see Timofeeva and her associates in Vol. XIV and XV of the Bulletin of the Irkutsk Anti-Plague Institute), proved useful for a differentiation of both plague and pseudotuberculosis bacilli from acid- and gas-forming microorganisms as well as from other pasteurellae. The medium was particularly suitable for field work.

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However, as the authors added with great reason, for the differentiation of atypical plague or pseudotuberculosis strains neither this nor any other of the presently available media can obviate "the involved and long process of combined cultural studies on a whole series of differential media.

- 15) Droshevkina, M. S., On the type specificity of brucellosis phages. (Pp. 109-115.)

The studies of the author led to the conclusion that the brucellosis bacteriophages are not suitable for a differentiation of the three brucella types.

- 16) Prostetova, N. P., The distribution of brucellosis bacteriophages in the body of the guinea-pigs. (Pp. 117-126.)

Exhaustive studies led the author to the conclusion that the brucellosis bacteriophage is capable of a prolonged existence in healthy as well as brucellosis-infected guinea-pigs. The potential practical importance of these observations is emphasized.

- 17) Strikhanova, E. V. et al., The epidemiology of brucellosis in the Krasnodar Krai. (Pp. 127-132.)

The authors stated that during the period from 1952 to 1957, 588 human brucellosis attacks were noted in the Krasnodar Krai, sheep or products derived from them forming the source of infection in 74.2%, cattle, or, rarely, cow milk in 10.4% (the source of the infection remaining unknown in 15.4%). Among 88 cultures isolated from human sufferers 86 were of the Br. melitensis type, only two of the Br. abortus type. The latter was also found in four aborting cows.

Though admitting the palliative value of anti-brucellosis vaccination of man, the authors emphasized the importance of this prophylactic measure. They stated in this connection that a temporarily less extensive use of this method in 1953 led to a 53% higher incidence of the disease in 1954. Since then, with vaccination widely administered, the frequency of human brucellosis attacks consistently and markedly decreased.

- 18) Balandin, G. A. et al., The epidemiology of brucellosis in the Stalingrad Oblast. (Pp. 133-137.)

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The incidence of brucellosis in the Stalingrad Oblast before World War II was extremely low. However, due largely to a re-importation of the domestic animals from eastern areas after the war the disease began to be more frequent from 1943 onwards until in 1949 758 cases were noted in the oblast as against 27 in 1943. Whereas only 3 raions were affected in 1943, the number had risen to 40 in 1949.

During the period from 1952 to 1957 a total of 1137 cases was recorded in the oblast. In 67% of these patients, infection had been contracted from sheep, in 14% from cattle; in 2% cow milk served as source of the infection. The source of infection remained unknown in 17% of the cases.

Systematic anti-brucellosis vaccination with the live IEM vaccine of the population groups under risk of infection was started in 1952. Discussing the results of the vaccination campaigns, which are shown in a graph, the authors stated that if the incidence of the disease was considered to be equal to 100 in 1952, it became gradually lowered since 1955 to drop to a value of 23.4 in 1957. At the same time the incidence of the disease in goats and sheep showed a constant rise until in 1957 it reached a level five times higher than that in 1952. The value of anti-brucellosis vaccination was thus undoubtedly great.

- 19) Balandin, G. A. et al., The epidemiology of brucellosis in the Voronezh Oblast. (Pp. 139-144.)

Manifestations of brucellosis in domestic animals, apparently related to the importation of steers and rams for breeding purposes have been noted in this oblast since 1931, the existence of the disease in man since 1938/1939. The re-importation of the herds of domestic animals evacuated before the occupation of the oblast by the German armed forces (1942-1943) led to a high incidence of the disease among the domestic animals and in man. From 1952 to 1957 451 persons became affected, mostly (87.6%) through contact with goats and sheep.

The value of anti-brucellosis vaccination was shown by the authors in the following table:

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<u>Year</u>	<u>Total Brucellosis Attacks</u>	<u>Incidence in Foci Without Vaccination</u>	<u>Incidence in Foci With Vaccination</u>	
			<u>Cases Among Non-Vaccinated</u>	<u>Cases Among Vaccinated</u>
1952	203	159	36	8
1953	47	35	11	1
1954	49	36	6	7
1955	36	30	5	1
1956	48	37	4	7
1957	68	57	-	11
<u>Totals</u>	<u>451</u>	<u>354</u>	<u>62</u>	<u>35</u>

As the authors emphasized, 12 out of the 35 persons who contracted brucellosis even though they had been vaccinated, fell ill at a time when their immunity had not yet become complete (9 within a month after inoculation). With the exception of a worker in a meat-packing plant, the vaccinated persons contracting brucellosis had been under a particularly heavy risk of infection, i.e. attending aborting goats and sheep. Nevertheless, out of the 20 patients of this group who were hospitalized, only two suffered from a severe form of the disease.

- 20) Balandin, G. A. et al., Epidemiology of brucellosis in the Rostov Oblast. (Pp. 145-152.)

As can be gathered from this account, in which no figures on the incidence of the disease are given, the brucellosis situation in the Rostov Oblast was generally similar to that in the oblasts dealt with in the preceding reviews. However, in marked contrast to the latter, the large-scale vaccination campaigns conducted in the Rostov Oblast since 1952 exerted up to the year 1956 inclusively scarcely any influence upon the incidence of the disease. As the authors maintained, this was due to two reasons. On the one hand, from 1952 to 1956 vaccinations were administered preferably in the foci of cattle-type brucellosis (which were in a marked minority). On the other hand in the areas where goats and sheep were the source of the infection,

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the vaccination campaigns were restricted to already established foci of the disease. A radical change in this policy was made in 1957 when attention in the vaccination work was directed mainly to "potential" foci of brucellosis, i.e. to such foci where the herds of goats and sheep were threatened by the disease. As shown in a graph, a spectacular drop in the incidence of human brucellosis resulted.

- 21) Sazykin, S. P., Clinical and epidemiological peculiarities of cattle-type brucellosis. Report III. Some clinical peculiarities of cattle-type brucellosis. (Pp. 153-166.)

Evaluating the results of the careful observations recorded in 8 tables as well as in the text of his article, the author made the following statement:

"The evidence adduced makes it clear that, though persons infected with Br. abortus do not develop clinically manifest forms of brucellosis and remain capable of working and though their treatment is not a problem for the medical staff, still such persons cannot be considered to be absolutely healthy.

Signs like the often observed hypertonicity, vegetative dysfunctions and marked nuclear shifts in the neutrophile leucocytes speak quite convincingly for a peculiar pathogenicity of Br. abortus for man. A comparison of the subjective complaints as well as of the objective findings in people infected with Br. abortus with those in persons who had a clinically manifest attack of brucellosis shows that the brucellae of the abortus type are considerably less pathogenic than those of the melitensis type."

(The first two articles of this series were published respectively in volumes XIV and XV, Installment 2 of the Transactions of the Rostov Anti-Plague Institute.)

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- 22) Sazykin, S. P., Clinical and epidemiological peculiarities of cattle-type brucellosis. Report IV. A contribution to the problem of the adequacy of human anti-brucellosis vaccination in the foci of cattle-type brucellosis. (Pp. 167-174.)

The author maintained that

"it is not indicated to administer the live anti-brucellosis vaccine made from the strain Br. abortus 19-BA to the personnel working in the farms infected with cattle-type brucellosis and still less indicated to use this method in farms put under quarantine ('isolators'), since the inoculations produce in the vaccinated the same clinical forms of brucellosis as in persons infected with Br. abortus in the foci of this type of the disease."

Therefore the prophylactic work in such foci of the infection ought to comprise the whole complex of measures for the prevention of brucellosis except vaccination.

- 23) Balandin, G. A. et al., The immunological reactions and the epidemiological efficacy of cutaneous anti-brucellosis vaccination. (Pp. 175-178.)

Observations on a group of 2,525 persons, of whom 1,619 were cutaneously vaccinated with the IEM vaccine, convinced the authors of the efficacy of this method. There was no case of brucellosis in the vaccinated during the 9 months following inoculation as against four attacks in the control group.

- 24) Poliakov, I. I. et al., On the immunological reactions and the epidemiological efficacy of cutaneous anti-brucellosis vaccination in relation to the mode of its administration. (Pp. 179-182.)

The authors of this article, the details of which must be studied in the original or in translation, found that differences in the size of the vaccine dose and the number of its administrations to the skin exerted no major influence on the appearance of the post-vaccinal immunological reactions.

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Regardless of the mode of inoculation all the vaccinated remained free from brucellosis, whereas one attack of the disease was noted in the control group. (This study was made with the IEM vaccine.)

- 25) Poliakov, I. I. et al., On the reactions to the cutaneous application of brucellae of the vaccinal strain 19-BA in brucellosis-infected persons. (Pp. 183-189.)

It was found that in a major part of the tested individuals cutaneous application of brucellae of the vaccinal strain 19-BA led to the appearance of local and general allergic reactions. Occasionally the procedure led to the occurrence of a latently existing brucellosis infection. It was indispensable, therefore, that serological and allergic tests also precede the cutaneous application of anti-brucellosis vaccine and that reacting persons be positively excluded from vaccination.

- 26) Poliakov, I. I., To the problem of enteral immunization against brucellosis. (Pp. 191-205.)

The author stated in the conclusion to his well documented article that

"In order to induce an intensive vaccinal process...it is necessary that not less than 500 million organisms of the vaccinal strain (19-BA) reach the small intestine; this is practically impossible, because the overwhelming part of the organisms perishes in the stomach and only single brucellae reach the small intestine. Neutralization of the stomach contents does not protect the brucellae against the bactericidal action (of the gastric juice) as they are sensitive to a slight content of hydrochloric acid."

- 27) Khakhina, Z. D., Comparative immunological data on experimental subcutaneous and cutaneous vaccination against brucellosis. (Pp. 207-212.)

The final conclusion of the author was that, as far as vaccination of guinea-pigs with the strain Br. abortus 19-BA was concerned, the cutaneous mode of inoculation was more efficacious than immunization by the subcutaneous route.

- 28) Drozhevkina, M. S. et al., Prospects for an improvement of the therapeutic anti-brucellosis vaccine. Report II. The brucellosis Vi-vaccine. (Pp. 215-221.)

Summarizing their findings, which do not lend themselves to the purposes of a brief review, the authors postulated that

1. A study of the preventive properties of the isolated Vi and O antigens of the brucellae confirmed the importance of the first mentioned antigen in the production of an anti-infectious immunity.
2. The efficacy of killed anti-brucellosis vaccines is dependent upon the presence of O as well as of Vi-antigens.
3. The brucellosis Vi-vaccine, prepared through addition of purified Vi-antigen to a heat-killed culture of the Br. melitensis strain 364 (W form) protected guinea-pigs against challenge with five or ten infective doses.

(The first article of this series appeared in volume XV, 1959, of the Transactions of the Rostov Anti-Plague Institute.)

- 29) Mishnaevskii, M. N. et al., Tissue therapy of experimental brucellosis. Report II. (Pp. 223-228.)

The conclusions reached by the authors, whose first report was published in 1958 in the Transactions of the Astrakhan Anti-Plague Station, Installment 2, were that

1. The implantation of tissues (spleen or suprarenals) from animals infected with Br. abortus into brucellosis-infected guinea-pigs exerted a favorable influence upon the course of the disease, as shown by a lessened dissemination of the brucellae. Histological examinations of the animals treated with spleen implantations showed less marked morphological alterations than those present in control animals.
2. Implantation of the spleen of healthy animals acted to a lesser degree in the same sense but implantations of the suprarenals of healthy animals did not influence the dissemination of the causative organisms.

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3. The favorable influence of the infected implants appears to be due to the combined action of "bio-stimulators" and the brucellosis antigens.

- 30) Klimova, T. K., An instance of the observation of tularemia bacilli in the mummified carcasses of domestic mice, brought in with grain imports. (Pp. 229-231.)

It is of interest that the observations mentioned in the title of this note were made in January 1949 in the port of Leningrad. The early detection of the infection rendered it possible to prevent a spread of the disease.

- 31) Pushnitsa, F. A. et al., Species incidence and frequency of rodents on sea-going vessels of the European part of the USSR. Report I. Rodents on the vessels in the Black Sea. (Pp. 233-243.)

The investigations of the authors showed that the rat-infestation of ships making long-distance journeys had become greatly decreased. Among the small vessels plying locally those of the fishing and technical fleets were most heavily infested.

The numbers and species incidence of rodents found during the 5 years from 1953 to 1957 on vessels in the three ports of Odessa, Novorossiisk and Batum is shown in the following table:

<u>Port</u>	<u>Total Captures</u>	<u>R.r.rattus</u>		<u>R.r.alexandrinus</u>		<u>R.norvegicus</u>		<u>M.musculus</u>	
		<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Odessa	971	475	48.9	228	23.5	143	14.7	125	12.9
Novorossiisk	309	124	40.1	159	51.5	10	3.2	16	5.2
Batum	177	97	54.8	18	10.2	6	3.4	56	31.6

The Rattus subspecies were thus most prevalent.

- 32) Pushnitsa, F. A. et al., Species incidence and frequency of rodents on sea-going vessels of the European part of the USSR. Report II. Rodents on the vessels of Baltic and White-Sea ports. (Pp. 245-252.)

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Observations made from 1952 to 1957 on the vessels of the ports of Leningrad and Arkhangel'sk gave the following results:

<u>Port</u>	<u>Total Captures</u>	<u>R. rattus</u>		<u>R. norvegicus</u>		<u>M. musculus</u>	
		<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Leningrad	1164	1112	95.5	21	1.8	31	2.7
Arkhangel'sk	584	563	96.4	14	2.4	7	1.2

Rattus rattus was thus by far most frequently found.

- 33) Kliuchnik, N. S., Some data on the multiplication of Rattus norvegicus in the Leningrad mercantile port. (Pp. 253-257.)

Quoted by title.

- 34) Agafonov, A. V. et al., Comparative evaluation of some methods for the assessment of the frequency of the mouse-like small rodent species. (Pp. 259-268.)

Quoted by title only.

- 35) Klimchenko, I. Z. et al., Some problems of the campaigns against susliks with baits under the conditions of the "Black Earth Lands." (Pp. 269-280.)

Observations made by the authors in 1957 in the territory of the "Black Earth Lands" (Chernye Zemlie, snowfree stretches north of the Caspian Sea) showed that the susliks (Citellus pygmaeus) eagerly consume poisoned grain baits put out for a second time. Poison campaigns whose results are unsatisfactory may, therefore, be repeated. It is best to deposit the baits in the immediate vicinity of the burrows.

- 36) Mokhin, K. M. et al., A contribution to the study of the seasonal activity of the physiological functions of the small suslik. (Pp. 281-290.)

This report, recording inter alia the results of electrocardiogram examinations, is quoted by title only.

- 37) Klimenko, I. Z. and Fomushkin, V. M., Mortality among antelopes. (Pp. 291-292.)

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The main cause of the great mortality observed among the antelopes of the Kalmyk ASSR in the spring of 1957 was foot- and mouth-disease.

- 38) Morozova, I. V., An accelerated method for the parasitological examination of rodent burrows. (Pp. 293-295.)

The author of this note discusses the relative merits of two variants of the method of flea collection from rodent burrows with the aid of ribbons. Single applications of this method were found to suffice for orientative purposes.

89. Leiman, V. N., Observations on the clinique of brucellosis endocarditis. Vrachebnoe delo (1963) 1: 95-97. (From the Department of Infectious Diseases of the Kuibyshev MI headed by V. P. Petrov.)

This article records the histories of the two out of 596 brucellosis patients in whom the presence of a specific endocarditis was detected. One of the two sufferers succumbed to the affection.

90. Iarovoi, L. V., Clinique and treatment of the sequelae of brucellosis of the sheep-goat type in man. Sov. med. 26 (1963) 1: 69-76. (From the Department of Infectious Diseases [Chief--L. V. Iarovoi] of the Stavropol MI.)

Quoted by title only.

91. Popkova, E. G. and Tomashpol'skii, I. V., Report on an outbreak of aseptic meningitis caused by the Echo virus 13. Sov. med. 26 (1963) 1: 76-79. (From the Clinic of Infectious Diseases of the Zaporozhe Institute for ATP and the 2nd Infectious Diseases Hospital [Chief--O. R. Radionova].)

Quoted by title only.

92. Kaitmazova, E. I., Efficacy of antibiotics and chemo-therapeutic drugs in relation to the time of their administration after brucellosis infection of white mice. Antibiotiki 8 (1963) 1: 46-49.

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(From the Brucellosis Department [Chief--Prof. P. A. Vershilova] of the N. F. Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

As discussed in the text and shown in tables, (1) peroral administration of chlortetracycline, oxytetracycline or furacillin for 3, 2 or 1 days before infection with Br. melitensis or simultaneously with this prevented a spread of the infection in only 4 of the 84 white mice tested; (2) chlortetracycline treatment of white mice, commenced 5 days after brucellosis infection, even if continued for a week, exerted only a temporary bacteriostatic effect; (3) a seven-days course of chlortetracycline treatment commenced immediately after brucellosis infection proved effective, 72 out of 78 of the test mice remaining free from the infection for a month; (4) when chlortetracycline treatment, commenced 5 days after brucellosis infection, was continued for 15 days, 63 out of 70 mice remained free from the disease.

93. Uraleva, V. S., Colimycin-fast forms of Brucella melitensis. Antibiotiki 8 (1963) 1: 49-53.
(From the Rostov-on-Don SR Anti-Plague Institute.)

As stated by the author, it is easy to make brucellosis strains highly resistant to colimycin by passing the organisms through broth media with gradually increased contents of this antibiotic.

All the colimycin-fast strains were also resistant to streptomycin, while some showed a slight and temporary resistance to levomycetin and the tetracyclines. The strains showed an impairment or even a loss of their agglutinability with specific serum and a loss of their virulence. They showed a flocculation in tryptaflavin solution and when heated; the urease activity was increased.

94. Korobkova, E. I. and Liskina, I. V., Use of methylen-blue reduction for the in vitro determination of the virulence of P. pestis. Zh. mikrobiol. 40 (1963) 1: 73-79.
(From the All-Soviet SRI "Mikrob.")

The conclusions reached by the authors of this article, which must be studied in detail by those interested in the subject, were that

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1. An examination of 25 museum strains of P. pestis (10 of which were virulent, 15 avirulent) showed that the virulent strains decolorized methylen-blue more slowly than the avirulent growths, i.e. they possessed a weaker dehydrase activity.

2. Avirulent strains experimentally produced from the corresponding virulent strains decolorized methylen-blue more rapidly than the virulent parent strains. Such tests permitted to detect a transition from the virulent into the avirulent form.

3. The method of methylen blue reduction can be used for an orientative in vitro evaluation of the state of virulence of plague strains and for their differentiation from avirulent strains in the R-form.

4. Smooth variants of P. pestis decolorized methylen-blue very slowly or not at all, a phenomenon due to their biological peculiarities.

95. Landik, T. G. and Iachenko, M. K., An experience of the detection of the source of brucellosis infection through the laboratory examination of milk. Zh. mikrobiol. 40 (1963) 1: 79-83.
(From the Sanitary-Epidemiological Station of the Lugansk Oblast.)

As stated by the authors of this practically important article, brucellosis-infected raw cow milk played a major role in the causation of this disease in Lugansk Oblast (Ukrainian SSR) where 76 out of a total of 152 sufferers observed during the period from 1956 to 1960 had been infected by the alimentary route.

In 1959 the authors, therefore, instituted a system of examination of cow milk, including that sold in the markets, with the aid of cultivation and precipitation tests (ring reaction). They claim that hand in hand with other control measures the timely detection of infected milk supplies was responsible for the marked decline of human brucellosis in the oblast, where only 6 infected persons were found in 1960.

96. Skvortsova, E. K. and Likhacheva, N. P., Electron-microscopic investigation of the morphological changes in E. coli and anthracoids under the influence of some phenol preparates. Zh. mikrobiol. 40 (1963) 1: 88-91. (From the Central SRI of disinfection.)

Quoted by title only.

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97. Aleksandrov, N. I., Gefen, N. E. et al., Improvement of the nutrient medium and search for a method of purifying the protective anthrax antigen. Zh. mikrobiol. 40 (1963) 1:103-107.

As recorded in two previous reviews of the present series (see Abstracts Nos. 512 and 699) the authors had obtained a protective antigen for immunization against anthrax. They now report on further efforts to produce and purify this antigen. The conclusions reached through this study, for the details of which the original or a translation must be consulted, were that

1. The chemically produced adsorbed anthrax vaccine shows a low toxicity and marked immunogenic properties.

2. A milk-peptone medium is proposed for the cultivation in order to accumulate the extracellular protective antigen.

3. Best suitable for the purification and concentration of this antigen is precipitation with 40% ethyl alcohol followed by adsorption of the precipitate on aluminium hydroxide and lyophilization.

98. Fikhman, B. A. and Braude, N. I., The numerical equivalent of the turbidity of brucella suspensions. Zh. mikrobiol. 40 (1963) 1:120-123.
(From the Tarasevich State Control Institute and the Moscow Institute of Epidemiology and Microbiology.)

Comparing the turbidity standards of suspensions of the vaccinal brucella strains with the number of organisms present, the authors found that in the case of the strains of Br. abortus 19, 19-BA and 104-M 10 turbidity standard units corresponded to an average bacterial content of 2 billion organisms per ml. The corresponding figure for Br. melitensis was about 3 billion ml.

Suspensions made from dry live brucella vaccines showed a 30-35% higher bacterial content than those made from the above mentioned cultures.

99. Mikhailova, R. S. et al., On the relation of the plague bacillus to lactose. Zh. mikrobiol. 40 (1963) 1:123-127.
(From the Anti-Plague Institute of the Caucasus and Transcaucasus, Stavropol.)

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The authors recorded the interesting fact that, in contrast to the findings made elsewhere, a majority (77.9%) of the 333 plague strains isolated from 1950 to 1958 in the Caucasus and Transcaucasus acidified lactose.

They suggest further studies in order "to detect possible relations between the origin of the plague strains and their behavior to lactose."

100. Kravchenko, A. T. et al., Changes of the properties of the causative organisms of Q-fever. Report I. Biological properties of the variants Delta and B Delta-1 of the Grit strain of Rickettsia burneti. Authors' summary. Zh. mikrobiol. 40 (1960) :152.

101. Nosik, N. N., Influence of cortisone on virus infections and anti-virus immunity. Vop. virus. 8 (1963) 1: 3-10. (From the D. I. Ivancovskii Institute of Virology, AMS, USSR, Moscow.)

The well-documented survey (77 references) can be quoted by title only.

102. Desiatskova, R. G. et al., Basic properties and functions of ribonucleic acid of the virus of tick-borne encephalitis. Vop. virus. 8 (1963) 1: 20-24. (From the Moscow SRI of Virus Preparations.)

The authors give a description of the properties of the ribonucleic acid obtained from tick-encephalitis virus with the aid of phenol deproteinization.

103. Podolian, V. IA. et al., L-transformation of viruses and rickettsia in tissue cultures. Report I. L-transformation of the psittacosis virus. Vop. virus. 8 (1963) 1: 24-27.

Quoted by title only.

104. Andzhaparidze, O. G. and Bogomolova, N. N., Chronic infection of cells with the virus of tick-borne encephalitis. Report II. Properties of the virus isolated from chronically infected cultures. Vop. virus. 8 (1963) 1: 40-43. (From the Moscow SRI of Virus Preparations.)

In their first communication (Vop. virus. 7 [1962] 6: 650) the authors reported that it was possible to maintain a chronic form of infection through passage of the tick-borne encephalitis virus in HEp-2 cell cultures. In the present study of the properties of the virus maintained in this manner for 24 months, they found that the modified virus (except when reactivated by cultivation in tissue cultures prepared with pig embryos kidney cells) was not pathogenic for subcutaneously, intraperitoneally or orally infected white mice. However, the modified virus proved to be destructive for the cells of some kinds of tissue cultures.

105. Romanenko, V. F. and Gavrilov, V. I., Adaptation of the sheep pox virus to cultures of KEM-La cells. Vop. virus. 8 (1963) 1: 48-52.
(From the All-Soviet Institute of Experimental Veterinary Medicine and the L. A. Tarasevich State Control Institute of Medico-Biological Preparations.)

The authors give a detailed description of the successful adaptation of the sheep pox virus to cell cultures made from skin-muscle tissues of mouse embryos (KEM-La cell line).

106. Stetkevich, A. A., Comparative characteristics of the tick-borne encephalitis allergens derived from different virus-containing suspensions. Vop. virus. 8 (1963) 1: 52-56.
(From the Tomsk SR Vaccine and Serum Institute and the Tomsk MI.)

The conclusions reached by the author were that

1. Purified preparations made from the virus of tick-borne encephalitis, when used for intracutaneous tests on patients suffering from this disease or vaccinated against it and, for the purposes of control, on patients with other diseases and on healthy persons proved to exert a sufficiently specific allergic action.

2. Under equal conditions of purification and inactivation differences were found between the allergens made from suspensions of the brain of infected white mice and the allantoic fluid of infected chick embryos: in comparison with the former, the latter allergen proved more specific in patients and showed a lesser para-allergic activity.

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3. A statistical evaluation of the results obtained through a comparison of the two kinds of allergens showed that the more frequent unspecific reactions produced by the mouse-brain allergen was related to the presence of an allergic component in the brain of the white mice.

4. Accordingly allergens made from the allantoic fluid rather than those from the brain of white mice are to be recommended for the diagnosis of tick-borne encephalitis.

107. Levkovich, E. N. and Zasukhina, G. D., Further experimental studies of the tissue culture vaccine against tick-borne encephalitis. Vop. virus. 8 (1963) 1: 56-60. (From the Institute for the Study of Poliomyelitis and Virus Encephalitis, AMS, USSR, Moscow.)

The studies of the authors showed that

1. Sufficiently high titers of the tick-borne encephalitis virus in chick embryo tissue cultures could be obtained when suspensions of the brain of infected white mice and of rat-sucklings were added to the seed material.

2. An addition of human albumin to the cultures promoted an accumulation of the virus and its preservation without an impairment of the immunogenicity.

3. The use of adsorbents like aluminium hydroxide increased the immunogenicity of the vaccine.

4. Vaccines which had been inactivated at 4°C with formol and then kept for a short time at 37°C, were not free from viable virus.

5. A prolongation of the exposure at 37° from 3 to 6 days did not materially change the immunogenicity of the vaccines.

108. Chumakov, M. P. et al., Isolation from Ixodes persulcatus and from human patients in Western Siberia of a virus different from that of tick-borne encephalitis. (Short communication.) Vop. virus. 8 (1963) 1: 98-99.

As stated in this note, teams of Soviet and Czechoslovak workers engaged in field work in the Kemerov Oblast of

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Western Siberia isolated from ticks and from human patients suffering from febrile affections a virus serologically different from arbor viruses of the type of tick encephalitis and other viruses like that causing Japanese B encephalitis. The properties of the newly detected virus were as follows:

"The newly isolated virus strains possess a well marked pathogenicity after intracerebral inoculation not only for newborn white mice but also for newborn white and cotton rats and newborn Siberian hamsters. Adult hamsters and adult white mice fell ill and died in single instances. In intracerebrally infected rhesus monkeys one observed short-lasting fever and viremia. The newly isolated virus produces a cytopathogenic effect not only in chick embryo and pig embryo kidney cell tissue cultures but also in those of human embryo fibroblasts, of primary and surviving cells of human amnion, HeLa cells and primary monkey kidney cells. In cell cultures under an agar layer it forms large clearly defined plaques.

Observations on the neutralization reaction of the newly isolated virus in chick embryo cell cultures with the sera of 93 patients hospitalized on account of a febrile affection after tick bites and showing no well defined antibodies to the virus of tick-borne encephalitis, gave clearly positive results in 57 cases (61.3%). In analogous tests with 21 paired sera from human patients (taken during the first days of a febrile affection after tick bites and after about 2 weeks later) a considerable rise of the antibody titers was noted in the second serum specimens in 10 cases, whereas in 11 instances there was no change of the high antibody level in the early and late sera."

109. Gendon, IU. Z. et al., Search for a method for the preparation of tissue smallpox vaccine. Vop. virus. 8 (1963) 1:114-115.
(From the Moscow SRI of Virus Preparations.)

The technical details of this short preliminary note have to be studied in the original or in a translation.

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110. Bakaeva, O. A. and Ostrovskaia, N. N., Detection of the brucellosis antigen in the serum of experimental animals in the early stages of the development of the infection. Zh. mikrobiol. 40 (1963) 2: 13-19.
(From the Gamaleia Institute of Epidemiology and Microbiology, AMS, USSR.)

The studies of the authors led to the following main conclusions:

1. The specific brucella antigen has been observed in the sera of guinea-pigs and rabbits in the early stages of brucellosis infection. Its presence was detected with the aid of prolonged complement fixation tests in the cold with the precipitated fraction of the sera (obtained through acidification*) and allergic tests on sensitized guinea-pigs.

2. The specific brucella antigen is detected with the aid of prolonged complement fixation tests 9-24 hours after infection of the test animals, whereas agglutination tests permit a diagnosis of an infection with the same doses of brucellae not earlier than after 7 days.

111. Aleksandrov, N. A., Gefen, N. E. and Gapochko, K. G., Aerosol immunization with dry powder vaccines and toxoids. Report XI. Study of the efficacy of aerosol re-vaccination with dry brucellosis vaccine. Zh. mikrobiol. 40 (1963) 2: 42-48.

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

1. Revaccination of guinea-pigs which have been rendered immune through primary anti-brucellosis vaccination with live brucellosis vaccine did not stimulate immunological reactions but led merely to an additional sensitization of the test animals.

2. Such revaccinations, if administered early (7 days) or late (180 days) after the initial immunization,

* As stated in the text, a stream of carbon dioxide was passed through the sera to be tested after they had been four times diluted with distilled water and inactivated by heating at 58°C for 30 minutes. A considerable precipitate formed which, after it had been centrifuged and brought to the original volume of the specimen with normal saline, served as antigen.

i.e. before the animals had become immune or after they had lost their immunity, produced a satisfactory activation of the vaccinal strain with the development of a general process and were immunologically effective.

3. To confirm these results, it will be necessary to test the specific resistance of the animals revaccinated at different intervals after the initial immunization.

112. Efremova, V. N., Reactogenic and immunological changes in human sera after aerosol immunization with typhoid monovaccine. Zh. mikrobiol. 40 (1963) 2: 51-54.

Quoted by title only.

113. Pilipenko, V. G. et al., Cutaneous immunization of man with combined plague, tularemia and brucellosis vaccines. Zh. mikrobiol. 40 (1963) 2: 57-61.
(From the SR Anti-Plague Institute of the Caucasus and Transcaucasus.)

Following up earlier studies on experimental animals (see Abstract Nos. 7 and 414) the authors recorded the following observations when testing the triple vaccine on a small group of people and making at the same time control tests with the three monovaccines.

1. Cutaneous inoculation with the combined vaccine against plague, tularemia and brucellosis did not lead to severe local and general reactions. The degree of these reactions was identical after the administration of the combined vaccine and the monovaccines.

2. The immunological changes (tested by tularin and brucellin reactions and agglutination) were of an equal degree after administration of the triple vaccine and the monovaccines.

3. The combined vaccine, whether containing the usual doses of the three antigens or a 4-5 times increased dose of the tularemia component, was innocuous and capable of producing an immunological response to the three antigens concerned.

4. If no dry combined vaccine is available, it can be prepared ex tempore by mixing the three dry monovaccines. Combinations of only two of the vaccines may be made up in the same manner.