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Problems of Virology (Russian Journal No. 5, 1962), pp. 631-632.

Critique and Bibliography. Translated by Sgt. Charles T. Ostertag.

Natural Smallpox. Works of the Conference on Problems of Epidemiology, the Clinic, Laboratory Diagnosis, Specific Prophylaxis and Therapy. Editor - S. S. Marennikova. Moscow, 1961.

The book reviewed consists of a preface, written by V. M. Zhdanov, and 5 sections.

The first section throws light on the problem of the epidemiology of smallpox, based on data concerning morbidity in foreign countries from 1953 through 1959 (T. A. Gorbacheva, V. A. Sinodskaya, and V. Ya. Kormilitsyn), and on the basis of an analysis of a smallpox outbreak in Moscow in January, 1960 (K. V. Golubchikova and S. A. Samvelova). The authors pointed out that from 1953 through 1959, natural smallpox was recorded in 84 countries - on all the continents of the earth (the overall number of afflicted was more than 819,000). In a number of countries of Asia and Africa, smallpox is encountered without let up from year to year. They also note a yearly drift of smallpox to individual countries and territories which are free from this disease.

The book analyzes the imported outbreak of smallpox in Moscow and describes the systematic measures taken for its elimination (the exposing and isolation of afflicted persons and those who came in contact with them, mass vaccination of the population, disinfection processing of foci, etc.). Only 10 days after the first diagnosis of smallpox was determined, the measures taken made it possible to eliminate the danger of the subsequent spreading of the disease in such a large city as Moscow. This experience in eliminating a smallpox outbreak is of great scientific and practical value.

The second section of the book includes 2 articles which characterize the clinical peculiarities of the course of smallpox in Moscow in 1960 (E. A. Gal'perin and A. V. Yeremyan).

A diversity of clinical forms of the illness with a prevalence of light cases (varioid) was observed and there were sicknesses from smallpox without a rash. Hence - a delayed retrospective diagnosis of the first illnesses, giving way then to hyperdiagnosis. The explanation of this fact by the systematic vaccination of the population of the USSR does not give rise to objections. In a practical respect, the authors have an important conclusion about the necessity for alertness on the part of doctors in regard to sick persons arriving from abroad with a vague course of illness, the timely institution of isolation and other anti-epidemic measures in such cases, and the improving of doctors' qualifications and the development of specific methods of rapid diagnosis.

The third section of the collection is devoted to laboratory diagnosis of smallpox and is of special value. It begins with an article by S. S. Marennikova and associates, "Methods of Laboratory Diagnosis of Smallpox and Their Relative Evaluation, Based on Material from the Outbreak of 1960." The authors presented well-documented facts about the use of methods of laboratory diagnosis of smallpox which they developed (isolation of the virus in chorio-allantoic membranes of chick embryos, in a tissue culture taking into consideration the cytophagous action of the virus and its inhibition by a specific gamma globulin, the detection of cytoplasmic inclusions - Guarnieri bodies, and determining the content and dynamics of antihemagglutinins in blood serum).

This section also presents facts from workers at the Institute for the Study of Poliomyelitis of the AMA, USSR, and the Moscow Municipal Sanitary Epidemiological Station on the laboratory diagnosis of smallpox by using a method of fluorescent antibodies, the isolation of the virus in a tissue culture in the chorio-allantoic membranes of chick embryos, and also the electron microscopic study of the smallpox virus in a tissue culture.

The problem of the specific prophylaxis and therapy of smallpox makes up the content of the fourth section of the collection. In an article by M. S. Sokolov and L. G. Badiryan, an attempt has been made to generalize the instructive experience of the mass vaccination of the capital's population in an extremely short time.

Two articles (A. V. Yeremyan, S. S. Marennikova, and V. A. Zuyev, B. I. Mil'ner and others) treat the actual problem of the criteria of immunity in those vaccinated. The authors' efforts were directed to the study of only one test - the titer of antihemagglutinins - without a comparison with other indices. Moreover, as a rule, there was a lack of pairing sera for the development of immunological combinations. In a number of cases, the percentages and titers were arrived at on the basis of very few observations (3, 9, 18, 28, 30, etc.). All this lowers the value of the given series of investigations. The authors do not express a clear opinion about the authenticity of one or the other indices of immunity in vaccinated persons, and their evaluation of the cutaneous reaction in a vaccination is contradictory. However, the observations regarding the increase of the titers of antihemagglutinins in persons with a negative cutaneous reaction to the vaccination have some definite interest.

There is practical value in the works by S. S. Marennikova and associates, which is devoted to the use of anti-variolic gamma globulin for seroprophylaxis and serotherapy of smallpox. These observations have been made in the USSR for the first time, and the use of anti-variolic gamma globulin made out of serum from hyperimmunized animals is for the first time in world practice. An analysis of smallpox illnesses in Moscow showed that vaccination during the incubation period has a favorable influence on the course of the disease but it is incapable of preventing the disease. The use of the anti-variolic gamma globulin in foci had a prophylactic effect. The preparation is also recommended for seroprophylaxis of illnesses among persons having a contraindication to vaccination. Finally, note is made about the positive effect of gamma globulin in the treatment of sick persons.

The last section of the book is devoted to an analysis of post vaccinal complications and attempts at their specific therapy (O. A. Khondkorian and others; S. S. Marennikova and V. V. Petrosov). The authors noted some peculiarities of the complications after vaccination in comparison with facts from world literature (the outbreak of vaccination illnesses as a result of revaccination but no initial immunization, the affection of all age groups of the population, mainly persons from 30 - 60, the absence of paresis and paralysis, and others). Observations of the effectiveness of anti-variolic gamma globulin during the treatment of these complications allow us to make a preliminary deduction concerning the positive effect of this preparation.

Materials in the collected works testify to the fact that during the process of eliminating the smallpox outbreak in Moscow, they not only used the experiences of many years, but they developed and approved several new methods (methods of laboratory diagnosis of the disease, the production and application of highly effective anti-variolic gamma globulin for seroprophylaxis and serotherapy of smallpox, and also for the treatment of postvaccinal complications).

It must be noted that individual articles come to conclusions which others do not, references are used for some articles but not for others, and the contents of some articles are not in complete accord with their title (for example, the article by E. A. Gal'perin). However, these few deficiencies do not lower the overall favorable impression of the book which will be of valuable assistance for medical personnel in various specialties.

V. D. Belyakov