What has taken place in your Museum in these first days of Mr. Lohr's presidency is an assault without parallel and without precedent in any American cultural institution. It is an affront to the intelligence of the community. It has started unfavorable comment in the scientific world; it has been termed a "blitzkrieg" and "Naziism" in the public press. If this dictatorial action can be tolerated in this Museum of Thought, in whose founder's character the keynote was the recognition of human values, what hope is there for American institutions in general? Ruthlessness can not in any guise be construed as a virtue.

I am your appointee, duly elected. In coming to the Museum I left a post in a worthy institution, resigned a civil service appointment with assured income and retirement allowance. I am fully aware of the "thirty days' notice" clause in the letter of appointment, but surely I was justified in the expectation of security of tenure which prevailed in every similar institution of the world until violated by Nazi and Fascist practice.

There has been no charge or intimation that I have been inefficient or incompetent, inattentive, careless, negligent, slothful, recreant in any wise in the discharge of my duties. There can be no charge of failure to cooperate with the new régime, for I have been given no opportunity to cooperate. I have given the same devotion to the Museum that in other years I gave to my university and observatory, and in military service to my country. I have taken pride in participating in the development of the Museum to an institution of beauty, power, and nobility. I have striven to interpret science so that we might apply wisely the powers it has provided, that we might know its spiritual value, and adopt its severe code of honesty and forthrightness.

If you, the trustees, believe that the Museum needs no longer the guidance which I have provided and have sought to make vigorous yet thoughtful and considerate, if you feel that you can not stanchly support your appointed director in the discharge of his duties as you have defined them, then perhaps you may wish to construe this Statement as a resignation. I trust that the board in taking action will be represented by more than a bare quorum.

The strength of the ideals of this institution and civic pride of Chicago are such that the Museum can not perish. In other days I have said to you that its purpose so clearly fulfils a need that support will flow to it naturally. It is not necessary to dismiss many men of loyalty and integrity, to cut close to its very heart and see it survive to prove that it has vitality.

In another place I wrote:

> We trust that this Museum may promote friendly understanding and mutual respect among those who engage in research, those charged with the development and management of new and established enterprises, those who invest their savings in them, the skilled workmen, and the general public. We hope that this institution may kindle in some youth the spark of genius, supply the clues to the solution of many problems, give to some craftsman the inspiration for invention, and to all who come within its walls realization of the majesty of thought and the nobility of labor.

The thought was expressed as a trust and a hope, but perhaps you will hold in mind that this was in reality my creed. In it you will find no grain of personal ambition, but rather the spirit of cooperation, the aspiration that our Institution might be a factor in promoting mutual understanding and uninterrupted progress. I shall stand ever ready to aid in its fulfilment.

I had had expressions of regret and disapproval of Mr. Lohr's action from some of the Trustees but I felt that if the Trustees were faced with an impasse as between the President and Director they would vote to sustain the newly elected official. The statement was construed as a resignation and as such it was accepted "effective at the close of business of September 30, 1940." The Trustees further adopted a resolution commending my energetic directorship and in recognition thereof authorized and directed the president to pay to me "a sum equivalent to six months' salary."

PHILIP FOX

SPECIAL ARTICLES

TICK-BORNE HUMAN ENCEPHALITIS IN THE EUROPEAN PART OF USSR AND SIBERIA

WITHIN recent times a new virus disease of the central nervous system in man, the verno-aestival or tick-borne encephalitis, has been discovered and investigated in the Soviet Far East.[1]

[1] (1) A. G. Panov, *Z. nevropatol. i psikhiatr., Moscow,* 7: 6, 18–32, 1938; (2) A. N. Shapoval, *Ibid.,* 7: 10, 74–80; (3) E. N. Levkovich, A. K. Shubladze, M. P. Chumakov and K. D. Soloviev, *Arkh. Biol. Nauk,* 52: 1, 162–183, Moscow, 1938; (4) M. P. Chumakov and S. G. Gladkikh, *Bull. Biol. et Med. Exp. USSR,* 2–3, 7, Moscow, 1937; (5) M. P. Chumakov, *Z. Mikrob. i Epidem. Moscow,* N 4, 1939; (6) A. A. Smorodinzev, E. N. Pavlovsky, M. B. Krol, *et al.,* Reports to the Union Microbiol. Conf., 1939 (in press); (7) L. A. Silber, V. L. Olshevskaya, *et al., Arkh. Biol. Nauk.,* 56: 2, 1939.

The peculiar features distinguishing this variety of encephalitis from similar varieties, *i.e.,* the North American (St. Louis) and the Japanese summer-encephalitis, concern, first of all, its epidemiology. As a matter of fact it is transmitted by a peculiar vector, the *Ixodes* ticks (*Ixodes persulcatus,* Schulz, 1930, *et al.*) which were shown to carry the virus and to infect humans through a bite.

The disease is to a certain extent endemic for certain woody localities affecting mostly people engaged in forest work.

The maximum incidence falls on the end of May and the beginning of June preceding (in distinction to the Japanese and St. Louis encephalitis) the hot season and the mass appearance of mosquitoes. The causa-

tive agent of the disease, the neurotropic filterable virus,[2] closely resembles in all its properties that of St. Louis and of the Japanese encephalitis except for its antigenic structure and certain other pecularities.

So far it has generally been accepted that the tick-borne encephalitis of man occurs only in thick forest (taiga) of the Far East. This view is partly refuted by our findings that similar diseases may occur beyond the woodland zone of the European part of the Soviet Union. The question is thus raised as to a more wide occurrence of these diseases, not only in the Soviet Union but in other countries as well, where the corresponding natural conditions and the *Ixodes* ticks are present.

In examining, May, 1939, two sera of blood of humans recovered from the so-called atypical poliomyelitis of adults (Perm district) the senior of the writers found a high content of antibodies to the Far-East strain of the virus of the tick-borne encephalitis of man.

This finding led us to a more extensive virusological (Chumakov) and clinico-epidemiological examination of the affections of the central nervous system diagnosticated as "atypical poliomyelitis," "serous meningitis," "post-grip encephalitis," the "Kojevnikov epilepsy," etc.

Through the collaboration of local neuropathologists we have learned that in several districts of the Soviet Union (Belarussia, Perm, Kirov, Sverdlovsk, Cheliabinsk district, Western Siberia, etc.) there occur every year, sporadic cases and small localized outbreaks of diseases that are quite similar in the clinical picture and epidemiology to the Far East tick-borne verno-aestival encephalitis. Numerous tests of the sera of typical reconvalescents invariably gave positive results as regards neutralization of the virus of the tick-borne encephalitis.

The disease is characterized by acute beginning high temperature, vomiting, meningeal and general cerebral phenomena, obscured consciousness and frequently by the development of flaccid pareses, paralyses and muscle atrophy, mostly of the upper limbs, bracial girdle and neck.

The season of the incidence is May to September. The disease affects wood cutters, hunters and similar persons attacked in the forests by the ticks one to two weeks prior to the beginning of the disease.

Numerous ticks, *Ixodes persulcatus,* were detected in the local forests (including those situated in direct vicinity to large inhabited localities). These ticks showed great activity in attacking man.

We have succeeded in isolating from the brain of three persons deceased from encephalitis and from the blood of one patient at the height of the disease, four strains of the neurotropic filterable virus (Ural and its neighborhood).

A similar virus was also detected in the local ticks, *Ixodes persulcatus,* which proved naturally infected at all stages of development and readily infected mice on which they fed. Most of the strains (above twenty) were obtained through a bite. It was also found that these ticks collected at the stage of fasting imago and fed on laboratory animals give rise to an offspring (larvae nymphs) which contains a highly active virus. Hence, in the ticks the encephalitis virus is transmitted through the ovum and during metamorphosis; it apparently propagates in the ticks without doing them any particular harm.

In another series of studies carried out in collaboration with N. N. Vorobieva and N. E. Sofronova we have succeeded in detecting a similar virus (four strains) in the brain of wild rodents killed in the endemic focus, *viz.,* hares and squirrels which are attacked by the ticks—the virus vectors.

A large group of strains was studied in detail by means of the following additional methods: (1) cross neutralization of the virus with specific immune sera (of man and animals) and (2) cross vaccination of mice against infection. All the isolated strains were found to be identical to one another as well as to the Far East strains of the tick-borne verno-aestival encephalitis.

In isolating the virus from humans and animals advantage was taken of the widely applied method of preliminary enrichment of the test material by cultivating it on embryonic tissues in Carrel dishes (after the Maitlands) or by inoculating into developing chick embryos.

Thus it was shown for the first time that in the European part of USSR and in Siberia there occurs a peculiar virus disease, *viz.,* the tick-borne encephalitis of man. Further study is necessary of its geographic distribution and of its relation to other neuro-virus infections transmitted by insects.

M. P. CHUMAKOV
N. A. SEITLENOK
ALL-UNION INSTITUTE OF EXPERIMENTAL MEDICINE, MOSCOW

[2] References 3, 5 and 7, footnote 1.

VITAMIN B_1 IN RELATION TO THE GROWTH OF GREEN PLANTS[1]

THE demonstration of the significance of vitamin B_1 in the growth of pea embryos[2] and excised pea[3] and tomato[4] roots has raised the question of the role of

[1] Since completion of these experiments the writer has been informed of extensive experimentation on this question now in progress at the United States Department of Agriculture laboratories at Beltsville, Maryland.

[2] F. Kögl and A. J. Haagen-Smit, *Zeit. Physiol. Chem.,* 243: 209, 1936.

[3] J. Bonner, SCIENCE, 85: 184, 1937.