

EXPERIMENTAL MEDICINE. — *Potential rickettsial and neo-rickettsial origin of multiple sclerosis.*

Report (*) by Mr. Paul Le Gac, Mr. Paul Giroud, and Mrs. Nicole Dumas, presented by Mr. Jacques Trefouel.

[Abstract:] Cases of multiple sclerosis present the same epidemiological factors as cases of rickettsioses and neo-rickettsioses. Their serums were shown to be slightly positive for one or more antigens. Therefore, their lesions may appear in the form of vascular complications of these conditions, and, by the same token, can be addressed by therapeutic treatment with broad-spectrum antibiotics.

An in-depth study of the history of subjects with multiple sclerosis has allowed us to detect in them, invariably, the presence of epidemiological factors which are identical to the factors that we always encounter during rickettsioses and neo-rickettsioses.

By correlating this observation, on the one hand, with knowledge about the histo-pathological lesions of multiple sclerosis, and, the other hand, with knowledge about the significant role played by rickettsias and neo-rickettsias in vascular pathology, we were able to envision the role played by the latter in the etiology of this condition. In point of fact, thanks to the work of Dejerine [1], we know that multiple sclerosis is a chronic, diffuse, and interstitial myelitis, in which the irritative process begins with the vascular element. The vessels are the seat of periarteritis and of endarteritis. Their wall thickens and their lumen is constricted until, in the region of the capillaries, it is almost completely closed. Dejerine himself actually wondered whether these vascular infiltrations, which constitute the most significant manifestations of medullar involvement, might be the only histo-pathological lesions that can explain the genesis of multiple sclerosis.

Starting with this information, our observations later led us to abandon the current view of the pathogenesis, which is based on the hypothesis of viral involvement of the nerve tissue, in favor of viewing multiple sclerosis as the result of an angiotropic process that first affects the medullo-cerebral vascular system and then becomes generalized. In conclusion, these cases of multiple sclerosis appear to consist of a vascular complication of rickettsioses and neo-rickettsioses.

The epidemiology was our guide. Thanks to it, we were able to determine that, from an epidemiological point of view, these cases of multiple sclerosis behave like rickettsioses and neo-rickettsioses.

Our serological diagnostic procedures included the use of the method, developed by P. and M.L. Giroud [2], for the micro-agglutination of the *Rickettsiae* on a [glass] plate.

Our observations for 27 cases of multiple sclerosis are described below.

In six cases in which the serum agglutinated *R. prowazeki* (the pathogenic agent of epidemic typhus), we detected six contacts with prisoners or deportees with current or previous typhus. In two of these cases, the serum was also positive for *R. mooseri* (murine typhus rickettsia), in spite of any and all vaccinations. Furthermore, in two of these cases, the serum was also positive for the X-14 and V-14 rickettsias.

In one case, in which the serum agglutinated *R. mooseri*, we noted several visits to the savannah region of tropical Africa.

In two cases (spotted fever and rickettsia) in which the serum agglutinated *R. conori*, we noted two instances of continuing contact with the flocks or herds.

In 10 cases in which the serum agglutinated *R. burnetti* (the pathogenic agent of Q fever), we observed eight instances of the daily consumption of raw milk, one visit to a farm in order to obtain food, and one case of professional contamination (in a veterinary assistant). Moreover,

one of the serums also agglutinated *R. mooseri*; two serums agglutinated *R. conori*; two serums agglutinated V-14 neo-rickettsia; and one agglutinated Q-18 ovine-abortion neo-rickettsia.

In three cases in which the serum agglutinated X-14 neo-rickettsia, we noted two extended visits to high mountain country during transhumance [i.e., when the herds were being moved to the grazing grounds], and one instance of continued close contact with animals (in Senegal).

In four other cases, the reactions were negative.

These findings led us to envision therapeutic treatment with high doses of broad-spectrum antibiotics, such as terramycin, typhomycin, and aureomycin, always in conjunction with hot balneotherapy.

The initial results were conclusive, with a return to normal activity. We also observed a negativization of the serological reactions, after a serological and clinical reactivation phase.

(*) Meeting of February 29, 1960.

[1] Dejerine, in *Rev. Med. Mens.*, Vol. 3 (1883), page 172.

[2] P. and M.L. Giroud, in *Bull. Soc. Path. Exot.*, Vol. 37 (1944), page 84.

The Academy met, in closed session, at 3:55 p.m.

The meeting was adjourned at 4:25 p.m.

R.C.