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**LIGHT AND ELECTRON MICROSCOPIC OBSERVATIONS
ON THE PERIPHERAL NERVE LESIONS IN MAREK'S DISEASE
(Neurolymphomatosis)**

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Histopathological observations were conducted on 66 naturally infected cases of MAREK's disease and 4 control chickens by examinations of peripheral nerves and other tissues. Electron microscopic observations were also made on 17 out of 66 cases of MAREK's disease and 4 cases of the same control chickens.

On the basis of histopathology and electron microscopy, the lesions in MAREK's disease could be classified as basically two types of lesions (T & R types). But sometimes the author encountered T+R type lesions. T type lesions may be considered as neoplastic proliferation or tumor (lymphosarcoma) of the lymphocytic series of cells originating from the primitive mesenchymal tissues. Furthermore, T type lesions could be subdivided into T1 and T2 types. The predominating cell in T1 type lesions was somewhat larger than a normal mature lymphocyte and had a relatively uniform outline. Cells appearing in T2 type lesions showed polymorphous appearances and T2 type lesions consisted of predominantly small and medium lymphocytes and MAREK's lymphoid cells (tumor cells) accompanying small numbers of macrophages and histiocytes or fibroblasts. R type lesions consisted of predominantly mature lymphocytes and plasma cells, accompanying fewer histiocytes, fibroblasts and macrophages. From the prominence of plasma cells, and character of the lesions, participation of an immunological phenomenon may be suggested for pathogenesis of the R type lesions. Interneuritic edema and demyelination were present independently of the number of infiltrating cells. There were two different processes of nerve degeneration in the peripheral nerves of MAREK's disease. The one process was due to an edema and the other was a Wallerian type of degeneration. Electron microscopic regenerating processes were also described. It was suggested that most of the macrophages appearing in the Wallerian type of degeneration may also be derived from Schwann cells. Virus particles (ca 80~100 m μ) with a central nucleoid were found in the peripheral nerves (in 2 cases out of 17 examined).