

6 days contained more arsenic than fish that had been exposed to a total of 15 p.p.m. for 42 days. (5) That arsenic is eliminated by the fish. One bass was fed 3 mg. of As_2O_3 on July 22, when analyzed on July 31, 9 days later, only .019 mg. of As_2O_3 were recovered. From another bass that had been fed 2 mg. of As_2O_3 , only .0095 mg. were recovered 9 days later. (This may mean also that some of this arsenic, although taken into the stomach, was not absorbed.) Ten fish, all having received the same treatment, were divided into 2 lots of 5 each. One lot was analyzed immediately after the arsenic treatment was discontinued, and gave an average of .799 mg. As_2O_3 per kg. of tissue. The second lot was transferred to untreated water and analyzed after one week. These gave an average value of .586 mg. of As_2O_3 per kg. of tissue.

By comparing our values with those obtained by the Swedish Arsenic Commission, Sodalín⁴, from untreated marine fish, we find that our values are much lower. Their values for the cod ranged from 0.5 mg. to 4.1 mg. per kg. (average 1.3 mg.).

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Status Marmoratus.

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This syndrome was first established by C. and O. Vogt,¹ who considered as its most characteristic feature the occurrence of quantitatively and qualitatively abnormal myelinated fibers in the striate body, giving it a peculiar marble-like appearance. They considered this condition as restricted to the striate body, and advanced the hypothesis that it was the result of a faulty development. Subsequent findings showed that the original assumptions were not justified. Bielschowsky² found similar changes in the cortex, showing that the condition was not restricted to the striate body; Anton³, Meyer⁴, Scholz⁵, and others suggested that the lesion might be the

⁴ Sodalín, Erick, *Biochem. Z.*, 1928, **201**.

¹ Vogt, C. and O., *J. für Psychol. und Neurol.*, 1920, **25**, 660.

² Bielschowsky, M., *J. für Psychol. und Neurol.*, 1924, **31**, 125.

³ Anton, G., *Jahrbuch. für Psychiat. und Neurol.*, 1896, **14**, 141.

⁴ Meyer, A., *Z. f. d. ges. Neurol. und Psychiat.*, 1926, **100**, 529.

⁵ Scholz, W., *Z. f. d. ges. Neurol. und Psychiat.*, 1924, **88**, 355.

result of some acquired process (inflammatory or other vascular) rather than a developmental deviation.

Our investigations were particularly concerned with these 2 phases of the problem, and are based on a study of 4 cases. Histological examination of 3 of these left no doubt that the condition was that of "*Status Marmoratus*", whereas the fourth case, still living, shows a clinical development and picture that makes this diagnosis quite probable. In all of these there was no hereditary predisposition to this disease, and the early development was such that in at least 3 of the 4 there was no reason to suppose that they were not normal to begin with. In all of these the condition seems to have developed following acquired diseases. Histologically too the condition appears to have developed on the basis of acquired processes, most probably inflammatory. In one of the cases, the "*status marmoratus*," furthermore, was limited to the cortex, none of the lesions being found in the striate body. In this case the condition is chiefly localized around blood vessels which show signs of a previous inflammatory process.

These results would justify the conclusion that (1) the condition is not necessarily restricted to any special system in the brain and (2) it should be looked upon as the result of a process disease and not only a developmental anomaly. This latter would bring up the question of the origin of the myelin bundles. Three possibilities were advanced by Meyer,⁴ viz., (1) actual regeneration of myelinated fibers, (2) development of a myelin covering around previously naked axis cylinders, (3) mechanically conditioned arrangement of preexisting myelinated fibers. In our studies the fine and delicate nature of the fibers, their abundance in places where they are not normally found in such quantities, their poorer staining in the Weigert method, and their relationship to the glial fibers within the scars leads us to the conclusion that they are produced by actual regeneration, but, that their peculiar arrangement into bundles is, at least partly, conditioned by mechanical factors of the scar formation.