

## Iowa Section.

*State University of Iowa, November 10, 1931.*

5836

### **Arsenic Content of Largemouth Black Bass (*Micropterus Salmoides* Lacepede) Fingerlings.**

A. H. WIEBE, E. G. GROSS AND D. SLAUGHTER.

*From the U. S. Fisheries Laboratory, Fairport, Iowa, and the Department of Pharmacology, State University of Iowa.*

Domogalla<sup>1</sup> and Surber<sup>2</sup> have used sodium arsenite to control vegetation in lakes and in sloughs respectively. Wiebe<sup>3</sup> has shown that concentrations of arsenic required to kill the vegetation are not harmful to our warm water fish: bass, bluegill, crappie, bullhead, golden shiner, and the common goldfish. The present investigation was undertaken to ascertain whether or not the fish when exposed to arsenic treated water, will acquire and store sufficient arsenic to make them unfit for human consumption.

The investigation shows: (1) That freshwater fish taken from natural waters contain appreciable quantities of arsenic; control fish from the Rock River (Ill.) gave arsenic values ranging from .100 mg. to .425 mg. of  $As_2O_3$  per kg. (2) That fish acquire a certain amount of arsenic from arsenic treated water: the average amount of  $As_2O_3$  per kg. from 9 control fish from the Rock River was .390 mg.; the average for 5 exposed fish was .886 mg. Domestic controls (9 fish) gave a negative test for arsenic. The treated fish (5 individuals) average .703 mg.  $As_2O_3$  per kg.; the range being from .411 mg. to .965 mg. per kg. (3) That the arsenic content in any lot of fish is variable. This fact is brought out by the above figures. (4) There is not exact correlation between the arsenic content of the fish and the concentration of arsenic in the water and the time the fish are exposed; fish exposed to a total of 8 p.p.m. for

---

<sup>1</sup> Domogalla, B. P., *Eng. News Rec.*, Dec. 9, 1921.

<sup>2</sup> Surber, E., *Proc. Am. Fish. Soc.*, 1921, 59.

<sup>3</sup> Wiebe, A. H., *Proc. Am. Fish. Soc.*, 1930, 60.

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, Sodalín<sup>4</sup>, 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.).

## 5837

**Status Marmoratus.**

WILLIAM MALAMUD AND K. LOWENBERG.

*From the Iowa State Psychopathic Hospital and the State Psychopathic Hospital, Ann Arbor, Michigan.*

This syndrome was first established by C. and O. Vogt,<sup>1</sup> 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. Bielschowsky<sup>2</sup> found similar changes in the cortex, showing that the condition was not restricted to the striate body; Anton<sup>3</sup>, Meyer<sup>4</sup>, Scholz<sup>5</sup>, and others suggested that the lesion might be the

---

<sup>4</sup> Sodalín, Erick, *Biochem. Z.*, 1928, 201.

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

<sup>2</sup> Bielschowsky, M., *J. für Psychol. und Neurol.*, 1924, 31, 125.

<sup>3</sup> Anton, G., *Jahrbuch. für Psychiat. und Neurol.*, 1896, 14, 141.

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

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