

tion covered a period of 19 days when the dog died. The amount administered aggregated the equivalent of 1.025 g.  $\text{As}_2\text{O}_3$ .

The liver removed from the dog on the nineteenth day weighed 350 g.

DOG No. II.				
Part of liver analyzed.	Moist wt. in grams.	Gram $\text{As}_2\text{S}_3$ obtained.	Equiv. to $\text{As}_2\text{O}_3$ .	Per cent. $\text{As}_2\text{O}_3$ in moist tissue.
Left lateral lobe.....	113.94	0.0022	0.00176	0.00155
Left central lobe	114.20	0.0021	0.00165	0.00144
Right central lobe				
Caudate lobe	131.82	0.0022	0.00176	0.00134
Right lateral lobe				

### Conclusion.

The foregoing results show that the arsenic of soluble arsenical compounds administered either subcutaneously or by the mouth to dogs until death occurs is uniformly distributed throughout the tissue of the liver.

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### NOTE.

**Note on Goeldner's Test for Cocaine.**—In a brief note published in the *Pharmaceutische Zeitschrift für Russland*, **28**, 489, and copied verbatim in the *Zeitschrift für Analytische Chemie*, **40**, 820 (1901), M. Goeldner describes a qualitative test for cocaine which is as follows: Mix about 0.01 g. of pure resorcinol in a small dish with 6 or 7 drops of pure, concentrated sulfuric acid. Add about 0.02 g. of cocaine hydrochloride to this solution which usually has a faint yellowish color. There is a vigorous reaction, during which the liquid acquires a beautiful blue color like that of the corn flower. The intensity of this color gradually increases. Sodium hydroxide solution changes the blue color to light pink.

On applying this test with chemically pure materials, it was found that no response as described by M. Goeldner could be obtained. This led to an examination of the conditions pertaining to the test with the following results: When the required amount of chemically pure resorcinol, 0.01 g., was mixed with 6 or 7 drops of chemically pure concentrated sulfuric acid, a faint yellowish color was obtained but when the specified amount of cocaine hydrochloride (0.02 g.) was added the "beautiful blue color like that of corn flower" failed to develop. If, however, concentrated sulfuric acid containing minute traces of nitrates or nitrites was brought in contact with resorcinol alone, a beautiful blue color was produced. The coloration obtained by M. Goeldner was, therefore, due to a trace of nitrous or nitric acid in the sulfuric acid employed and not to the presence of cocaine. This is in accord with the observation<sup>1</sup> that if resorcinol be heated with sodium nitrite, it forms a deep blue dye, soluble in water which,

<sup>1</sup> *Ber.*, **17**, 2617 (1884).

according to a later observation,<sup>1</sup> is composed of two dyes—resorufin and resazurin, derivatives of phenoxazine.

By further experimentation it was found that 1 cc. of a potassium nitrate solution containing 0.000001 g. of nitrogen as potassium nitrate, when carefully evaporated to dryness, and the residue moistened with chemically pure sulfuric acid, yielded a blue coloration when a small amount of solid resorcinol was added. The extreme delicacy of this test would, therefore, render it valuable to detect minute traces of nitrates and nitrites in residues obtained in the course of a water analysis.

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### NEW BOOKS.

**Molecular Association.** By W. E. S. TURNER. Pp. viii + 170, with diagrams. (Monographs on Inorganic and Physical Chemistry, edited by A. Findlay.) Longmans, Green & Co., 1915. Price, \$1.40 net.

There appears to be a fairly wide-spread impression that molecular association is a phenomenon which occurs relatively infrequently; but this view is erroneous, for further investigation of the matter always extends the list of associated substances, so that it would seem that some degree of association is of very general occurrence. Nor is it generally realized that the degree of association is not a fixed quantity but varies with a number of factors, of which the most important are temperature, pressure, electrical stress and solvent action; so that it is plausible that by a suitable choice of conditions one could obtain any substance partly associated just as one may obtain almost any solid substance in colloidal form. The author brings together the relevant experimental evidence—which, it may be remarked, leaves much to be desired as regards both quality and extent—and exhibits the present status of the question; the discussion will bring before the reader the present plentiful lack of definite information on this important topic. There is a list of 275 references to the text and an appendix, covering more than forty closely printed pages, in which the experimental data on the molecular complexity of dissolved substances are tabulated and summarized; these features alone render the book a desirable addition to the library.

JOHN JOHNSTON.

**Einführung in die Metallographie und Wärmebehandlung.** VON DR. ING. H. HANEMANN, Dozent für Metallographie und Materialkunde an der Königlichen Technischen Hochschule zu Berlin. Berlin: Gebrüder Borntraeger. 1915. vii + 128 pp. Price, 8.50 M.

This book is made up of twelve lectures delivered in a summer course

<sup>1</sup> *Ber.*, 23, 718 (1890).