of hypertrophy and accumulation of colloid. The intense mitotic proliferation of the biopsy specimens had, however, completely subsided. The diet containing 8.7 gamma per 100 gm. is unable, in the time given, to provide materials with which a substantial restoration of colloid can be achieved.

These experiments provide information as to the level of iodine intake at which cellular hypertrophy and colloid loss due, presumably to the processes of endemic goiter, may still be expected to occur. Thus the spontaneous changes in certain animals recorded in Table 1 c appeared with an iodine content of the diet of 6.9 gamma per 100 gm., while the darkened infected group of Table 1 a showed these changes on diets containing from 13.5 to 15.6 gamma per 100 gm.

In summary it may be observed that under the dietary and temperature conditions of the writer's work no decisive evidence was obtained that darkness induces marked colloid loss or cellular hypertrophy in the thyroid gland, nor was it possible by brief irradiation with ultraviolet light to influence unmistakably the hypertrophy induced by cold or the recovery therefrom. If it is true, as some have felt, that light is of great importance to the thyroid of the rat, the circumstances under which this influence can be satisfactorily established remain unknown.

The writer wishes to express his great obligation to Dr. Versa Cole of the Department of Surgery of the Ohio State University School of Medicine for the determinations of the iodine content of the foods used.

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Sex Difference in White Rat in Tolerance to Certain Barbiturates.

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Using duration of sleep and rate of mortality as criteria, we have verified the Nicholas and Barron[1] finding that the female white rat is much more sensitive to amytal* than is the male, in that on any

[1] Nicholas, J. S., and Barron, D. H., *J. Pharm. and Exp. Therap.*, 1932, **46**, 125.

* The drugs used were kindly furnished by the following firms: amytal, Eli Lilly & Co.; nembutal, Abbott Laboratories; evipan, Bayer Co.; pernocton, Riedel-de Haen, Inc.; hebaral, Parke, Davis & Co.

given, suitable dose it sleeps much longer and is more apt to die [18 males (m.), 18 females (f.)]. A similar sex difference is found with nembutal (15 m., 15 f.), contrary to Nicholas and Barron; to evipan or evipal (111 m., 86 f.), contrary to Kennedy[2]; to pernocton or pernoston (22 m., 22 f.), and, perhaps not quite as marked, to hebaral or ortal (15 m., 15 f.). Thus, as an example, after administering 363 mg. of sodium evipan per kilo, subcutaneously, to 5 winter males (summer much more sensitive), these sat up perfectly in from 1.0 to 3.5 hours; 4 females sat up in from 8.1 to 10.1 hours, and one died on this dose. No such sex difference could be found with barbital (8 m., 8 f.), or phenobarbital (8 m., 8 f.) In case of pernocton some rats die on the 2nd or 3d day, which agrees with the report by Barlow[3] and his associates and with the delayed deaths noted with the chemically related noctal by Fitch and Tatum.[4]

No sex difference to evipan could be detected in the dog (15 m., 15 f.), cat (8 m., 5 f.), rabbit (6 m., 4 f.), guinea pig (9 m., 9 f.), white mouse (10 m., 10 f.), turtle (10 m., 10 f.), or frog (20 m., 20 f.). This agrees with the Fitch and Tatum report upon rabbit sensitivity to barbiturates in general, with Kennedy in regard to white mice, and with our own study[5] upon amytal in the dog and rabbit, in case of which latter it had even appeared that the females recovered more promptly than the males, though the mortality was about even for the 2 sexes.

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[2] Kennedy, W. P., *J. Pharm. and Exp. Therap.*, 1934, **50**, 347.

[3] Barlow, O. W., ———, *Anesth. and Analg.*, 1931, **10**, 251.

[4] Fitch, R. H., and Tatum, A. L., *J. Pharm. and Exp. Therap.*, 1932, **44**, 325.

[5] Holck, H. G. O., and Kanân, M. A., *J. Lab. Clin. Med.*, 1934, **19**, 1191.