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the biological oxidations and their relationship to the thyrotoxicosis need further study.

*Cyanate Goiter in Man. Report of a Case with Histological and Metabolic Studies.* By RULON W. RAWSON (by invitation), SAUL HERTZ, and JAMES H. MEANS, Boston, Mass.

Chesney, Clawson and Webster, and Marine, Spence and Rosen, and others, have observed marked hyperplasia in the thyroids of rabbits fed a cabbage diet. Suk has reported large nodular goiters occurring endemically in a community where cabbage is a principal dietary item. The goitrogenic factor in cabbage has been reported to be certain cyanide compounds found in cabbage and other members of cruciferae family. Subsequently goiters have been produced in experimental animals treated with sodium cyanide, potassium cyanide and methyl cyanide. Robinson and O'Hare, and Barker have reported the development of goiters in hypertensive patients being treated with sodium or potassium thiocyanate.

We are reporting certain metabolic studies and the thyroid histology of one patient who developed a goiter after one year's treatment with potassium thiocyanate administered in treatment of hypertension. The blood cyanate during the period of treatment varied between 3.8 mgm. per cent and 8.9 mgm. per cent. While following the prescribed regimen, the patient improved symptomatically and the blood pressure fell from 220/130 to 140/100 mm. Hg. However, after taking the thiocyanate for one year, the patient complained of swelling in the neck. The swelling was found to be a large goiter over which a loud bruit could be heard. The gland was estimated to weigh about 180 grams. A definite bilateral lid lag and exophthalmos were present. The basal metabolic rate was minus 17. Blood plasma iodine was at the level of myxedema. A biopsy taken from the gland, which at operation was very vascular, disclosed extreme hyperplasia with architecture resembling papillary cystadenoma. The cyanate therapy was stopped, and one month later the thyroid was of normal size and the basal metabolic rate and blood plasma iodine had returned to normal levels.

We feel that the paradoxical findings in this case, i.e., the extreme hyperplasia in the gland, but laboratory signs of hypothyroidism, are of interest and may be of fundamental importance in interpreting thyroid physiology.

*Recent Clinical Developments in the Therapeutic Application of Radio-Phosphorus and Radio-Iodine.* By JOSEPH G. HAMILTON (by invitation) and JOHN H. LAWRENCE, Berkeley, Calif.

Radio-phosphorus has been employed for the treatment of a group of patients with polycythemia vera during the past two and a half years. A marked remission of the clinical and hematological signs of this disease has been observed in the majority of the patients following the administration of radio-phosphorus. No evidence of either leukopenia or anemia has been observed in any of

the patients and none developed any symptoms of radiation sickness.

A series of experiments with radio-iodine have been undertaken with the collaboration of Drs. Mayo H. Soley and Karl Eichorn. In these studies, a series of rabbits and two dogs were given large doses of radio-iodine ( $I^{131}$  half-life 8 days) and it was noted that almost complete destruction of the thyroid took place in all of the animals without evidence of damage to the other tissues of the body. Later, much smaller doses of radio-iodine were administered orally to three patients with hyperthyroidism. Four to six weeks later a marked clinical improvement was noted in each of the patients, with a parallel approach of the basal metabolic rate to normal levels. No adverse effects from the radio-iodine were noted either during or after the administration of this substance. Four and a half months later two of the patients were in a state of complete clinical remission and the third required another small dose of radio-iodine.

*Application of Radioactive Iodine in Therapy of Graves' Disease.* By SAUL HERTZ and (by invitation) A. ROBERTS, Boston, Mass.

Previous publications of this series have dealt with tracer studies in animals and man. Our present report is a preliminary one which gives an account of our early experiences, both failures and successes, in an attempt to evaluate the possibility of using radioactive iodine in a practical clinical manner in the treatment of patients with Graves' disease. It is in the nature of a progress report on this work up to date.

The general plan of the treatment is described and an analysis of the 10 (or more) cases in which it has been tried is given.

Information which we have obtained by careful study of the radioactive iodine uptake by the goiters and the urinary excretion studies is presented and discussed in relation to the problem of finding the best means for the administration of this new therapeutic agent.

*A Chemical Test for the Differentiation of Adrenocortical Tumor from Hyperplasia in Markedly Masculinized Women.* By HARRY B. FRIEDGOOD (introduced by Samuel A. Levine), Boston, Mass.

Previously reported observations from this laboratory are in general accord with those recorded by others in that the total 24-hour urinary 17-ketosteroid (17-KS) excretion is above 45 mgm. equivalents of crystalline androsterone in cases of virilizing adrenocortical tumor, and from 15 to 35 mgm. in instances of adrenogenital syndrome due to adrenocortical hyperplasia. Two cases of hyperplasia have been encountered, however, in which the 17-KS excretion equaled that found in tumor cases; and in one of these, which was a striking example of pseudohermaphroditism, the 24-hour 17-KS excretion was more than 80 mgm. Thus it is not the total 24-hour 17-KS excretion which is of significance in differential diagnosis. A differential point may have been found,

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