

Table VI.

State.					Death-rate from Thyroid Diseases per 10,000 (1934).
New South Wales	..	..	..	..	0·26
Victoria	..	..	..	..	0·29
Queensland	..	..	..	..	0·23
South Australia	..	..	..	..	0·27
Western Australia	..	..	..	..	0·18

With the assistance of collaborators, we have obtained data as to the incidence of thyroid derangement in certain islands of the Pacific. Dr. James, recently in charge of the Stewart Memorial Hospital at Rabaul, New Guinea, informs us that there are extensive areas of endemic goitre in New Guinea, that the distribution is very irregular, and is largely confined to villages in the mountainous inland parts of the country. Natives living within reach of the sea make extensive use of sea food cooked in sea-water, and among them he has not detected any cases of goitre. He has operated on two cases of thyroid toxicosis, both in females, one aged thirty-five, the other aged seventeen, both coming from endemic areas. Dr. Steenson in 1928 examined 15,000 people of all age-groups in the British Solomons and detected but two cases of thyroid enlargement. Dr. James, who has recently been transferred to the British Solomons, reports that in an investigation of 4,000 people on the Island of Choiseul he saw one case of thyroid enlargement in a female aged thirty-four years. Doctors Dovi and Satyanand, who have carried out thyroid surveys in Fiji, report that goitre is extremely rare among the Fijians and the Indians living in Fiji, except in the closely-inhabited Singatoka River valley on the Island of Vitilevu, where a high degree of endemicity is present. Dr. Turbott, when acting as Chief Medical Officer to Samoa, in 1936 travelled widely through the villages of the country carrying out physical examination of the people, and he reports that he saw but one case of simple goitre in Samoa. Dr. Ruhen in 1926 examined 3,000 people in Tonga, and recorded only two thyroid enlargements. Dr. Ellison in 1935 reports two cases of goitre in a survey of over 5,000 people in Raratonga in the Cook Island group. Dr. Cook in 1937 examined all the inhabitants of Pitcairn Island, and did not find a single case of thyroid enlargement. Dr. Steenson in 1937 reports that he has seen only four cases of simple enlargement of the thyroid in the people of the Gilbert and Ellice groups. We may therefore state that the Gilbert and Ellice Islands, Pitcairn Island, the British Solomons, Tonga, Raratonga, Samoa, and most of Fiji are non-goitrous.

CHAPTER V.—THE RELATION OF IODINE METABOLISM TO GOITRE INCIDENCE.

Hercus and Purves (1936) showed that the relationship between urinary iodine excretion and goitre incidence which was found to exist in Europe also held in this quarter of the globe. The more extensive data presented in Chapters III and IV confirm this relationship. The average urinary iodine excretions are: New Zealand (goitrous), 65; Australia, Samoa, and Abaiang (relatively non-goitrous), 165.

The median values of urinary iodine excretion and the goitre status of the individual districts are tabulated in Table VII.

Table VII.

Cromwell	..	..	..	..	..	24	Goitrous
Waikaia	..	..	..	..	..	39	„
Otekaike	..	..	..	..	..	41	„
Gisborne	..	..	..	..	..	43	„
Whangarei	..	..	..	..	..	48·5	Moderately goitrous.
New Plymouth	..	..	..	..	..	53	„
Thames	..	..	..	..	..	53	„
Stewart Island	..	..	..	..	..	56	„
Clydevale	..	..	..	..	..	61·5	Goitrous.
Melbourne	..	..	..	..	..	78·5	Slightly goitrous.
Perth	..	..	..	..	..	79·5	„
Brisbane	..	..	..	..	..	96	„
Abaiang	..	..	..	..	..	110	Non-goitrous.
Sydney	..	..	..	..	..	146	„
Adelaide	..	..	..	..	..	147	„
Samoa	..	..	..	..	..	172	„

It is evident that there is in general a close inverse relationship between goitre incidence and the level of iodine metabolism. Such an inverse relationship was found by Hercus, Benson, and Carter (1925) between goitre incidence and the iodine content of the soil. However, both they and Shore and Andrew (1929) drew attention to certain anomalies. The most outstanding of these anomalous districts was Thames, where the average soil iodine was low and yet the incidence of goitre but 9 per cent. We have found for Thames a median urinary iodine excretion of 53 micrograms per twenty-four hours, which is greater than the iodine content of the soil would suggest. Watson