

Endemic Areas.—Definite endemic areas have been established throughout the Dominion. It is interesting to note that in some cases these are actually on the sea-coast, where the soil is continually drenched with sea-spray—*e.g.*, Petone and the delta of the Clutha River. The marked endemic areas appear frequently to follow the course of the large rivers—*e.g.*, the Clutha, Mataura, Wanganui, and the Buller. Dr. Baker-McLaglan found that all along the course of the Waikato there is goitre, yet north of it is an almost goitre-free region. She noted also that in the largest area of limestone country in New Zealand—the King-country—goitre incidence is comparatively light. Pumice country shows a high incidence, but some other volcanic soils show lightest of all.

Water-supply.—With regard to water-supply in goitrous areas, various notes have been made by School Medical Officers. Christchurch and Blenheim, both of which have artesian water-supply, are marked endemic areas. Of two areas with high endemicity, South Canterbury is supplied by snow-fed-river water while the North Canterbury water-supply is largely rain-water. The contrast has been worked out between the children of the Hutt Valley and Wellington City. The Hutt Valley, which terminates in Petone, has a much higher goitre incidence: 41 per cent. as against Wellington City 25 per cent. Three schools of Wellington City were chosen. At Karori (Wellington City), where rain-water has been used until recently, the percentage for goitre for the whole school was 19 per cent. At Newtown (Wellington City), where the town supply from Wainui-o-Mata was used, the percentage was 25 per cent., the average for Wellington. The Terrace School district (Wellington City), is supplied by water from the Karori Reservoir—that is, upland surface supply—but, as the number of children at the school who live in the district is small, the percentage of goitre is not very reliable: 16 per cent. of the 176 children who live in the district had goitre. Most of the goitre at these schools was incipient: 1·5 per cent. of all the children examined had goitre larger than incipient. In the Hutt Valley a large part of the water-supply is artesian.

Length of Residence in the District.—Incidence appears to increase with the length of residence in the district. Of 48 men in the Civil Service who have lived in Wellington since childhood, 14 had incipient goitre and 1 small—total incidence, 31 per cent. Of 126 women who had lived in Wellington since childhood, 47 had incipient goitre, 13 small, and 2 medium, giving a total of 49 per cent. Those living in the Hutt Valley since childhood: Of 15 men, 4 had incipient, 3 small, and 1 medium—total, 53 per cent.; of 17 women, 11 had incipient, 2 small, and 1 medium—total 82 per cent.

Relationship to Focal Infection.—An effort was made to determine the relationship between incidence of goitre and focal infection, and for this purpose schools in the Hutt Valley were examined by Dr. Morgan. The results of the investigation were inconclusive. The figures for the separate age groups gave contradictory results, but the combined figures show that the proportion of septic tonsils and teeth is the same in children with no goitre as in those with incipient goitre. In the groups with small, medium, and large goitres, the percentages of unhealthy tonsils and teeth are higher. (Enlarged tonsils, 25·7 per cent the goitrous compared with 14·5 per cent. in the normal thyroid group; dental caries, 31·4 per cent. compared with 25·6 per cent. (age 11 to 14).) In two of the schools with the highest percentage of dental caries, however, there was the lowest of goitre. In children whose goitres had improved under treatment there was the average amount of dental caries and enlarged tonsils.

School Treatment of Goitre.—School treatment for goitre was placed on a definite basis in 1923. The treatment consisted of the administration of 1 grain of potassium iodide for ten weeks of three school terms—that is, 30 grains of potassium iodide per annum. The result of the treatment of a group of 3,000 goitrous children has been recently summarized. This showed 45 per cent. decrease, 34 per cent. stationary, and 20 per cent. increase. Of 1,000 goitrous children not under treatment, there was 12 per cent. decrease, 37 per cent. stationary, and 53 per cent. increase. The results of all School Medical Officers show an approximate decrease of 50 per cent. among goitrous children taking potassium-iodide treatment at school. Several make the statement that improvement is chiefly to be noted among the incipient cases. In the Wellington District greater improvement was noted among children who commenced it in the lower classes, especially those who had had three or four years' treatment. A definite number of cases develop goitre on prophylactic treatment. Dr. Wilkie, Auckland, found such cases to develop incipient and not marked goitre; but this finding may be due to too brief a period of observation. Our findings may be summarized thus: (1) Goitrous children taking potassium iodide (1 gr. per week for ten weeks of each of three school terms—*i.e.*, 30 gr. per annum) show a larger percentage of diminution and a smaller percentage of increase than goitrous children not under this treatment; (2) a definite percentage of goitrous children show increase when taking potassium iodide to extent outlined above; (3) a definite percentage of apparently normal children develop goitre when taking potassium iodide to extent outlined above.

A further illustration may be given by the following figures from Dr. McLaglan, Christchurch, giving result of treatment shown by several groups:—

		Normal Thyroids.						Total of all Types of Goitrous Thyroids.							
		Actual Totals		Unchanged.		Increased.		Actual Number.		Unchanged.		Increased.		Decreased.	
		B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
Treated ..	..	102	130	87·2	76·1	12·7	23·9	51	95	39·2	44·2	11·7	21	49	34·7
Not treated ..	..	55	64	70·9	64·0	29·1	36·0	25	28	28·0	42·9	60·0	50	12	7·1

B = Boys; G = Girls.