

The latest tests to be widely applied are based on immunological principles and are concerned with auto-immunity as a possible causative factor in thyroid disease, reviewed in these columns last year.¹ Since I. M. Roitt and colleagues^{2, 3} showed that antibodies to thyroglobulin are present in high titres in most patients with lymphadenoid goitre (Hashimoto's disease), and they believed this to be of aetiological significance, the concept of auto-immunity has been extended to the study of other disorders of thyroid function. Two separate auto-antigens have been identified in Hashimoto's disease. These are an anti-thyroglobulin demonstrable by precipitin tests^{4, 5} or by S. V. Boyden's⁶ more sensitive technique of tanned red-cell agglutination, and a complement-fixing factor directed against a "microsomal" antigen.⁷ These two antigens, which may be present together or separately in individual cases, are no longer thought to be the direct cytotoxic factor in Hashimoto's disease⁸; this awaits identification. Tests of auto-immunity have shown that lymphadenoid goitre can occur in a subacute form^{9, 10} which clinically resembles de Quervain's disease (subacute thyroiditis). In this last condition, believed to be caused by a virus, thyroid antibodies are not formed. Quiescent and focal forms of lymphadenoid goitre also occur and are probably more common than was formerly thought.⁸

Use of the sensitive technique with tanned red cells has now shown that thyroid antibodies are present in low or moderate titres in about 30% of patients with cancer of the thyroid and nodular goitre respectively, and about 60% of patients with thyrotoxicosis¹¹; the precipitin reaction is usually negative. In primary myxoedema the incidence of antibodies is much greater (about 80%), and in about 20% the titres are in the high range encountered in Hashimoto's disease. This has led to the suggestion that primary myxoedema may be an end-result of a silent Hashimoto's disease,⁸ which would agree with the findings of R. C. Douglas and S. D. Jacobsen¹² that the thyroid remnants in primary myxoedema show histological changes similar to lymphadenoid goitre.

In the opening pages of the *Journal* this week Professor E. J. Wayne and his colleagues discuss the

value of auto-immunity tests in the diagnosis of thyrotoxicosis and the management of patients with the disease. They have been able to distinguish two special groups of cases. The first consisted of five patients with unequivocal thyrotoxicosis but giving positive precipitin reactions, indicating extensive destructive thyroiditis. In three of these patients, treated by subtotal thyroidectomy, the excised gland showed features of thyrotoxicosis combined with focal thyroiditis of far greater extent and severity than is usual in a toxic gland. Two developed myxoedema within a few months of operation, which is consistent with earlier reports that subtotal thyroidectomy in patients with this type of gland carries a higher risk of subsequent hypothyroidism.¹³⁻¹⁵ It is also well known that thyrotoxic patients may end up spontaneously with myxoedema, which, in the light of recent findings, would seem to be due to a coexisting thyroiditis of lymphadenoid nature. Their second group was made up of five patients with goitre in whom thyrotoxicosis was suspected on clinical grounds and apparently confirmed by radioiodine tests. However, measurements of the serum protein-bound iodine and the response to a thyroid-suppression test with thyroxine were normal. The true state of affairs was revealed by the precipitin and complement-fixation tests, which were positive. The patients were shown to be euthyroid and to have auto-immune thyroiditis. This finding led to appropriate treatment with thyroid hormone. Professor Wayne and his colleagues warn against relying too much on radioiodine tests, which may show increased uptake in cases of lymphadenoid goitre as in some other cases of non-toxic goitre.

RETROSPECTIVE PAY IN THE HOSPITALS

The Royal Commission on Doctors' and Dentists' Remuneration recommended¹ that £9m. should be distributed to hospital doctors and dentists, and £11m. to general practitioners, as retrospective pay. This was to cover the period from March, 1957, when the commission was appointed, to the beginning of 1960, when the commission's recommendations for present remuneration would start to operate. Owing to the wide disparities in the proportions of the sums that are now being paid to consultants in different grades, some disquiet has been felt about the scheme. It is therefore worth looking again at its principles.

¹ *Brit. med. J.*, 1960, 1, 407.
² Roitt, I. M., Doniach, D., Campbell, P. N., and Hudson, R. V., *Lancet*, 1956, 2, 820.
³ ———, *ibid.*, 1958, 2, 1027.
⁴ Doniach, D., and Roitt, I. M., *J. clin. Endocr.*, 1957, 17, 1293.
⁵ Roitt, I. M., and Doniach, D., *Proc. roy. Soc. Med.*, 1957, 50, 958.
⁶ Boyden, S. V., *J. exp. Med.*, 1951, 93, 107.
⁷ Trotter, W. R., Belyavin, G., and Waddams, A., *Proc. roy. Soc. Med.*, 1957, 50, 961.
⁸ Roitt, I. M., and Doniach, D., *Brit. med. Bull.*, 1960, 16, 152.
⁹ Druze, G., Hainaut, J., Parmentier, R., and Musin, L., *Acta clin. belg.*, 1958, 13, 280.
¹⁰ Mogensen, E. F., *Ugeskr. Laeg.*, 1958, 120, 1553.
¹¹ Doniach, D., Hudson, R. V., and Roitt, I. M., *Brit. med. J.*, 1960, 1, 365.
¹² Douglas, R. C., and Jacobsen, S. D., *J. clin. Endocr.*, 1957, 17, 1354.
¹³ Whitesell, F. B., Jr., and Black, B. M., *ibid.*, 1949, 9, 1202.
¹⁴ Greene, R., *J. Endocr.*, 1950, 7, 1.
¹⁵ Levitt, L., *Lancet*, 1951, 2, 957.

¹ Report of Royal Commission on Doctors' and Dentists' Remuneration, para. 397, Cmnd. 939. H.M.S.O. 1960.
² Report of the Working Party for Hospital Medical and Dental Staff, *Brit. med. J. Suppl.*, 1960, 2, 72.
³ *Ibid.*, 1960, 2, 131.
⁴ Langston, H. H., *ibid.*, 1961, 1, 63.

After arriving at the sum of £9m. for hospital staff, the commission recommended that its distribution should be arranged by agreement between the Government and the profession's representatives. It thus became the task of the working party concerned with the remuneration of the hospital doctors and dentists to devise a plan² for distributing this money in a manner acceptable to the profession. That it succeeded in doing so seems evident from the approval its arrangements received from the Central Consultants and Specialists Committee, the Joint Consultants Committee, and the Representative Body of the B.M.A.³ On the other hand it may be conceded that, in order to treat everyone with scrupulous fairness, and in doing so to fulfil the intentions of the Royal Commission's report, the plan of distribution is so intricate that the details remain puzzling.

The scheme starts from the idea that the money should be distributed in a way that reflects the commission's ideas on what hospital doctors and dentists should have been earning in 1957-9 rather than on what they actually were earning. But first £¼m. was subtracted for the back payment of hospital locums, leaving £8¾m. to be distributed. The commission thought that average payments in 1960 should be 12% more than in 1957; for 1958 the working party took the difference to be 8% and for 1959 4%. The working party then took the salaries recommended for 1960 for each grade and multiplied them by 100/112 for 1957, by 100/108 for 1958, and by 100/104 for 1959. In this way so-called notional salaries for each grade and year were obtained. From these the actual salaries at the various points on the scales that were in operation were subtracted. The differences were then multiplied by the number of "whole-time equivalents" for each grade—i.e., the numbers of doctors and dentists there would be if all were doing the work whole-time. This multiplication gave the total notional sum of money needed for the grade, and the notional sums for all grades were added together. This grand total was somewhat larger than the £8¾m. available. So the proportion between the £8¾m. and the notional sum was used in a scaling-down operation to determine the amount available for each grade in each year. Thus the intention is to add to what a doctor actually received in 1957-9 a sum in proportion to what he would have received if the Royal Commission's recommendations for 1960 had been operative then.

This scheme owes its mystifying nature to an arithmetically awkward situation. This is that the Royal Commission did not recommend uniform rates of increase for all kinds of hospital doctors. On the contrary, the increases recommended for doctors in

the lower ranks were higher than for doctors in the middle ranks. Above them the consultants with merit awards did proportionately better than those without. In fact different increases were recommended for every grade and for the various merit awards. Because of this, the doctors getting a large percentage increase get proportionately a large sum in back pay.

The reasons why the higher-paid consultants do better in this share-out than the lower-paid are: first, the Royal Commission recommended proportionately greater increases for consultants with merit awards than for consultants without them; and, secondly, the working party used these proportions, like all the other proportions between the newly recommended salaries, to calculate the proportion in which the retrospective pay is to be distributed. In creating the disparities that they did in their recommendations, the Royal Commission are presumed to have done something to offset the financial disadvantages imposed on the higher-paid consultants between 1948 and the setting up of the commission. These have recently been summarized by Mr. H. H. Langston,⁴ chairman of the Central Consultants and Specialists Committee, and may be repeated here. First, A and B merit-award holders had suffered an abatement of their salary of £300 and £200 since 1954, and, secondly, increases of 5% and 4% were given in 1957 and 1959 on the basic scale but not on merit awards. In fact, no increase had been made to merit awards since 1948.

FUTURE OF METHICILLIN

Because of its stability against staphylococcal penicillinase, methicillin ("celbenin") is as active against staphylococci resistant to penicillin G as against sensitive strains. When the discovery and properties of this new form of penicillin were first announced in a series of reports and a leading article¹ in this journal no strains of staphylococcus resistant to it had been found among many hundreds examined, and little resistance had been elicited by deliberate attempts to produce it *in vitro*. This position has since been somewhat modified both by further *in vitro* studies and by reports from two sources of the discovery of naturally resistant strains. In an article at p. 863 of the *Journal* this week Dr. G. T. Stewart nevertheless takes a hopeful view of the future of methicillin on several grounds. In no case

¹ *Brit. med. J.*, 1960, 2, 720.

² Elek, S. D., and Fleming, P. C., *Lancet*, 1960, 2, 569.

³ *Brit. med. J.*, 1961, 1, 113.

⁴ Brown, D. M., and Acred, P., *Lancet*, 1960, 2, 568.