Dr. R. S. Trevor, who suggested the actinomycotic origin of the lesions, carried out the following investigations:

Some pus from the liver was stained by Gram's method and in eosin, and numerous typical actinomycetes with interlacing filaments were found. Sections taken from the liver substance in the neighbourhood of the abscess were also stained with a similar result. The pelvic organs had been kept since the operation, and an examination of the pus in the left ovary demonstrated many streptotrichiae. The substance of the organ, however, yielded no organisms although it was thoroughly searched. The right ovary and the tubes were also examined with a negative result.

Did infection take place through the vagina or by way of the intestinal mucosa? The following points may be mentioned in favour of the vaginal route: At the first operation the uterine appendages were much disorganized, and beyond the results of old appendicitis of uncertain date no evidence of disease was found in other parts of the abdomen. The three attacks of illness would, therefore, appear to be referable to the pelvic organs and the retrocaecal abscess to be of more recent development. This theory as to the direction of spread of the disease is borne out by the subsequent history of the case, for in the later stages the advance was in an upward direction. On the other hand, infection from the intestine is of far more frequent occurrence; and the discovery of a retrocaecal abscess at the necropsy, and the fact that the right side of the abdomen was involved, are further points in favour of this method of infection.

I am indebted to the kindness of Mr. G. R. Turner, Dr. A. F. Stabb, Mr. F. Jaffrey, and Mr. T. C. English for permission to publish the case.

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A PLEA FOR THE USE OF OATMEAL IN THE DIETARY OF CHILDREN.

By CHALMERS WATSON, M.D., F.R.C.P.E.,
EDINBURGH.

THERE is ample clinical evidence that a dietary into which oatmeal largely enters is one which is specially valuable for the growth and nutrition of children. In former days the diet of the people in many districts of Scotland included oatmeal as one of the staple ingredients, and, as is well known, this régime produced a big-boned and well-developed race. This being so, it is reasonable to think that there may be some ingredients in an oatmeal diet that have a favourable influence on one or more glands whose functional activity is of special importance during the growing period—for example, the thyroid gland. Some facts in favour of the correctness of this hypothesis have recently been ascertained,* as follows:

Six young rats about 6 weeks old were fed for four to eight weeks on a diet of uncooked oatmeal and water, an equal number of controls being fed on a bread and milk diet. At the *post-mortem* examination the most striking feature was the thyroid gland in the oatmeal-fed animals. This gland was markedly enlarged in the oatmeal-fed rats, the average percentage weight being 0.078 gram, as against 0.029 gram in the controls. Histologically the glands of the oatmeal-fed rats showed evidence of greatly-increased functional activity (see Fig. 2), with in two instances a swollen and detached condition of the secreting cells.

In a second series of 6 young rats which were fed on an exclusive porridge diet, the porridge being made with skim milk, a similar result was obtained.

These results appear to indicate that an excessive oatmeal diet has a markedly stimulating effect on the thyroid gland of young animals, and there seems no reason to doubt that a more moderate and more physiological use of the same food would be followed by a stimulation in a degree which would be wholly beneficial. It appears to me that we may find in these facts the explanation of the value of oatmeal in the dietary of young children, the results furnishing the scientific explanation, in whole or in part, of the well-established clinical fact that porridge is an excellent food for children. In accordance

with the teaching of these results we should no longer regard oatmeal water as a mere diluent or as a convenient form in which starch may first be administered to an infant (Holt), but as a foodstuff of very special value for the growing child.

This brings me to a brief consideration of the practical aspects of the subject, my remarks being restricted to the use of oatmeal in children from the third year onwards. Breakfast is the meal into which oatmeal should most

Fig. 1.—The normal appearance of the thyroid gland of a rat fed on the ordinary laboratory diet—bread and milk in known proportions. $\times 50$.

largely enter, the best form of administration being porridge and milk, which should be followed by a glass of milk and some bread and butter. It is not, in my opinion, advisable to supplement the meal by meat in any form, for two reasons: First, because it is not necessary and may be harmful; and, secondly, because the use of the meat tends to create a distaste for the more wholesome but less appetizing meal of porridge. If a child be given for its breakfast a little porridge, followed by bacon, it is

Fig. 2.—Thyroid gland of a rat of same age as Fig. 1, after being fed for six weeks on an oatmeal diet. The gland is enlarged, the colloid being increased in amount and staining more deeply.

certain that in 9 out of 10 cases, or an even greater proportion, the chief element in the repast, from the child's point of view, is the bacon. In this respect children are just like young animals. In an extensive experience of feeding rodents on different diets I have never seen a young rat which would look at porridge or bread and milk if meat was available. We must, however, recognize two important reservations to this general recommendation of a porridge breakfast for children. In the first place, a porridge diet, *per se*, is not good for

* This investigation was carried out in the Physiological Laboratory of Edinburgh University, the expenses being defrayed by grants from the Moray Fund and from the Carnegie Trust.

children on account of mastication not being essential for this diet. This fault may be counteracted by including in the diet crusted bread, rusks, Vienna rolls, and the like, which should be taken "dry," and not merely washed down with fluid, as is often the case. The inclusion of such articles of diet in the breakfast will ensure that due attention is paid to the development of the muscles of mastication, salivary glands, and jaws, a point of very great importance in the dietary of children. Secondly, clinical experience teaches us that certain children cannot properly digest and assimilate oatmeal. This feature is, in my experience, most frequently observed in the offspring of typically gouty parents. The parents of such children tell us that they cannot take porridge because of its "heating" properties, the objective indications of disturbed nutrition being found chiefly in a concentrated urine and in various skin eruptions. These symptoms are, however, much less frequently observed if the porridge forms the main article of the meal and is not followed by other highly nitrogenous food, such as bacon and eggs, as is frequently the case. There are, however, some children who cannot properly digest and assimilate porridge, and these are better without it, but, if careful attention be paid to the details of the dietary as a whole, it will, I believe, be found that these cases are much rarer than is commonly supposed.

ON THE PRESENT POSITION OF THE TREATMENT OF TUBERCULOSIS BY MARINE CLIMATES.*

By WILLIAM EWART, M.D.CANTAB., F.R.C.P.LOND.,
SENIOR PHYSICIAN, ST. GEORGE'S HOSPITAL, AND BELGRAVE
HOSPITAL FOR CHILDREN.

[AN examination of some of the principles of marine climatic treatment and of the requirements of the pulmonary affection was the subject of the address, which began with some general remarks on thalassotherapy, or sea treatment (sea air, sea water, sea bathing, sea voyages, and the pharmacology of the sea), and with a brief reference to Quinton's subcutaneous sea-water infusions.] *Ocean climate* differs from all others in its exclusively marine character and its *equability*, in contrast with the *sea-coast climates*, which are the *most variable* and offer endless combinations between the features of the coast and those of the sea, none of them being the ideal one for consumption, because not always at their best, whilst some may prove to be *too protective* in the individual case, and others *too active* for some of the complications.

Climate and open air can have no direct effect upon the bacillus, and the beneficial effects of the *seaside and its sea air* are mainly dependent upon the patient's power of "reaction" on the one hand and, on the other, upon the all-important effect upon the tendency to catarrh.

Touching the forms of tuberculosis, Nathan Raw has recently urged an etiological and clinical distinction between the infection from the "bovine" bacillus and that from the "human" bacillus, which agrees well enough with our climatological data and practice, all cases of "bovine" infection (surgical, glandular, scrofulous, cutaneous, serous, and visceral other than pulmonary) being almost unreservedly benefited by the sea. This is not always the case with the pulmonary affection, for which alone the "human" bacillus invasion would be to blame.

The multiple types evolved by individual predispositions (constitutional, organic, and functional) fall into the two groups: *Uncomplicated Tuberculosis* and *Catarrhal Tuberculosis, or Phthisis Pulmonalis*. In the first group, tuberculosis may be "latent" and healing, or "declared" and spreading. In the second (which includes the acute caseous form) catarrh is the chief agent of mischief as well as the first object of climatic treatment. To describe as "consumptives" the bearers of latent and spontaneously-healing tubercles would be inaccurate; and, on the other hand, "tuberculosis" does not depict the varied miseries of catarrh, of pneumonia, and of caseation in the painful record of advanced consumption. Bacillary infection

("tuberculosis" *per se*) may mean little or much damage, but "consumption" (or, in the Greek vernacular "phthisis") is always a big affair, and in pathology it spells "catarrh." We now have to reverse the famous dictum of Niemeyer, and to recognize that "the worst fate that can befall the patient infected with tubercle is that he should develop phthisis."

The *aërotherapeutics* of tuberculosis are thus, practically speaking, those of catarrh; but whereas sea air is curative of some forms of simple non-bacillary bronchitis, it is not always sufficiently dry for the cure of catarrh based upon tubercle. Whether we consider the meteorological factors or are guided by the results observed clinically, it cannot be gainsaid that the altitude is likely, and proves itself, to be more effectual in obviating early catarrh and curing it at any of its stages than the climate of the coast. In this connexion Dr. William Gordon's investigations upon the influence of wet winds are most suggestive, although he has not hitherto formulated any conclusions beyond the broad fact that the prevalence of phthisis is definitely increased by it.

But as we have not any altitudes available in this country, we should adopt an opportunist policy and make the most of our unrivalled assortment of "protecting" and "bracing" seaside resorts by careful selection of cases, by progressive elaboration of their clinical treatment, and by measures tending to correct any imperfections of the local climates. The "bracing" resorts possess the highest restorative efficiency, but their suitability for pulmonary tuberculosis is limited. The criterion of fitness for these climates is integrity of the mechanisms of "reaction," which are dependent above all upon cardio-pulmonary efficiency. Thanks to the possession of sound lungs and of a sound heart, the great majority of cases of tuberculosis other than pulmonary — surgical, scrofulous, cutaneous, etc. — are eligible for the bracing resorts and derive there the greatest benefit. Many cases of "latent" pulmonary tuberculosis are for analogous reasons eligible. But "declared" pulmonary tuberculosis, even at an early stage, and "early phthisis pulmonalis," claim the most careful climatic management, with a view to the avoidance or the cure of catarrh, and need protection from the stronger kinds of sea air. All cases of "advanced" phthisis, as well as the group of "chronic quiescent phthisis," admit of no alternative — they are to be sent to the milder stations.

The present position of the treatment by marine climates rests upon the recognition of the fact that mere "airing" and "salting" are not competent of themselves to cure the pulmonary complications of the disease when it affects the lungs. "Open air" and "sea air" are a basis for treatment, but cannot supersede the scientific methods of modern therapeutics. The marine resorts should add to their natural resources increased facilities for a systematic treatment planned upon a combination of the hospital idea and of the sanatorium idea. On this scheme alone can they look forward to an increased curative efficiency.

Meanwhile a much greater field of usefulness is open to them in *prevention*. The sanatorium movement is gravitating in that direction; but the seaside is *par excellence* the place for the "Prevention-Sanatorium" or "Preventorium," the inmates of which should be recruited from the most threatened ages and from the most dangerous surroundings. This is the direction in which a more extensive and systematic use of our marine climates is indicated. Their wider employment for the extirpation of tuberculosis in the coming generation is a possibility and a public duty.

Lastly, the task of improving the local opportunities for climatic treatment is not beyond the skill of modern engineering. Some of our prosperous stations rejoice in a sandy soil suitable for the growth of the pine; others in a mild and sunny hinterland; others in cliffs combining available shelter and altitude. Among them the city of our welcome is not the least favoured, and may yet secure a future of unequalled efficiency in the struggle against tuberculosis.

DR. T. LAFFAN of Cashel informs us that the County Council of the South Riding of Tipperary is to be added to the list of those which have accepted the opinion of Sir H. Poland, K.C., that the medical officer of a Poor-law institution is entitled to inquest fees under the Coroners' Act.

* Abstract of opening address at the Hastings meeting of the Balneological and Climatological Society, March 16th.