

a food? difficult to answer in clear-cut terms. No subject of scientific inquiry had led to such contradictory results or such diversity of opinion. Even the scientifically trained could not always wholly avoid the subconscious effects of bias, and that might influence, to some degree at least, the conduct of experiments. Especially might it affect the interpretation of results.

Nevertheless, the chief cause of discrepancies in the results were difficulties inherent in the experimental problem itself. The fact that alcohol was oxidized by the tissues was by itself no proof that alcohol thereby fulfilled the proper functions of a food. Oxidation was one of the means by which the body got rid of matter foreign to its economy. Without evidence to the contrary it might be quite legitimately supposed that alcohol came into such a category. An important and significant aspect of the facts was revealed by the question, Is energy which the combustion of alcohol liberates in the body available for the support of muscular activity? Modern studies of chemical events which occurred when a muscle contracted had given good reason for doubting in advance that alcohol could play a significant part. Those events involved the combustion of the sugar eaten or derived from the starch consumed. The combustion of sugar took place in a succession of steps or stages so that energy was made available within the muscle in the right place and at the right time.

Alcohol, Energy, and Work

The chemical machinery involved was so subtle and so highly specialized that it was very difficult to see how any fuel could be adequately employed in it save the sugar that was the natural fuel. The other natural foods—certainly the proteins—could be partly converted into sugar in the body, and that rapidly. They could thus serve the working muscles indirectly. Alcohol, on the other hand, was certainly not converted into sugar. Sir Gowland Hopkins went on to give details of the experiments which supported these *a priori* considerations. The conclusion to be drawn from those careful studies was that work did not increase the rate with which the alcohol disappeared from the blood and tissues. It could not, therefore, have provided energy for the muscular work done. Again, it had been shown that alcohol combustion seemed to be a device more for protection than one for utilization. If it were proved that the consumption of alcohol lent no support to an individual's daily activities, then research workers would be in possession of a fact of practical significance as well as of scientific interest.

Could alcohol supply the basal internal needs of the body? On this point so marked were the contradictions that Sir Gowland Hopkins suspected either that the right technique had not yet been acquired for studying the question or that there were unsuspected factors in the problem that had led some experimentalists astray. It was somewhat difficult, since alcohol could not subserve muscular activity, to see how it could effectively cover the needs of basal metabolism. Nevertheless, a piece of recent research seemed to show that alcohol, when added to a dietary not by itself adequate to support a normal rate of growth in young rats, was able to accelerate that growth. Alcohol could, of course, only possibly support growth indirectly by sparing the normal growth materials from combustion by being burnt in their stead. Though of scientific interest the outcome of that research had no direct bearing on practice. No one, certainly, would employ alcohol for encouraging growth in children or adolescents.

Some Practical Bearings

Discussing the problem in its more practical aspects Sir Gowland said that the conference met at a time when the nation, and now its Government—largely due to the efforts of an enthusiastic minority—had been made aware that large sections of the population were ill nourished and less physically fit than they should be. There was

a widespread desire to remedy that state of affairs. All knew that, whatever aid to physical fitness other measures might provide for the poor, and indeed for a large section of the wage-earning class, better nutrition was the most to be desired. Very many of the family budgets of these classes had been collected and studied. It would be insincere not to admit the fact that in a great number of cases the expenditure of the chief wage-earner upon beer reduced to a significant extent the ability of the housewife to buy adequate food for the rest of the family. That expenditure was seldom given among the figures of a family budget. Naturally, among the working classes as among others, the circumstances of life called for some form of self-chosen luxury. It was nevertheless unfair, and even cruel, that propaganda, subtle, suggestive, and intensive, should endeavour to persuade the worker that his beer made him more robust and increased the power of his muscles, thus tempting him to increased consumption and helping to salve his conscience when he knew that his expenditure on it was beyond his means.

HEALTH RESORTS CONFERENCE AT BATH

THE SPA AS A NATIONAL ASSET

The city of Bath extended its traditional hospitality during the week-end to a number of members of the medical profession meeting under the auspices of the British Health Resorts Association. It was one of the most successful of the events which that body has arranged. Two useful and well-sustained discussions were held in the Technical College—the old hospital—one of them on the role of the spa in the maintenance of physical fitness, and the other on hydrological methods in the treatment of injuries and diseases of the joints. The guests were taken round the bathing establishment, where demonstrations (with patients) were given of the various hydrological methods, including the deep bath, the hot pool, and the thermal vapour treatment. The mayor and corporation entertained the visitors to dinner at the Guildhall; an orchestral concert was arranged in the famous Pump Room; a visit was paid to the Roman baths; and, finally, the party were taken on a short motor tour of the environs of what has been described as the most nobly placed and best-built city in all England.

Physical Fitness and the Spas

At the first conference, which was presided over by Lord MESTON, the subject of the health resort in relation to the campaign for raising the standard of national fitness was opened by Lord HORDER. Most of the acute and devastating diseases, with the exception of cancer, said Lord Horder, were now under fairly good control; there remained the less lethal, though economically and socially distressing, states of ill-health, of which rheumatic diseases, functional nerve diseases, and metabolic disorders were examples. In dealing with such deviations from good health the spa could be of great assistance. But health was not mere absence of disease. It had a positive quality which was capable of almost indefinite extension, and here again the spa—later Lord Horder made it plain that he was referring to health resorts more generally—could help by the intensive cultivation of amenities, such as clean air, close contact with earth and sun, beautiful sights and sounds, with leisure to enjoy them. If the resorts were to raise the level of fitness for those free from disease it would mean co-operation between municipality, hotel proprietors, and doctors. Lord Horder made amends for some criticisms of British hotels uttered on a similar occasion at Bournemouth earlier in the year. He was prepared to say that there had been a great improvement both in the matter of quiet and of cuisine, thanks not a little to the British Health Resorts Association and its dynamic secretary (Dr. Alfred Cox).

Dr. G. R. P. ALDRED-BROWN of Bath reviewed the use of the spas in correcting the breakdowns of middle age and in supplying a measure of rejuvenation to the old. But he also mentioned the value of the spa in adolescence and early adult life, especially in preventing the tendency to a rheumatic "soil." If these people could be brought to the spas for regular courses of treatment so that their bodies were educated to function normally, they might escape those crippling scourges which were the result of a cold damp climate on a receptive constitution. It would be costly, but enormous funds were lying at the disposal of certain approved societies. At present additional benefit No. 16, introduced by the Insurance Act, 1928, which consists of payments to approved institutions in respect of treatment of members required for the prevention or cure of disease, allowed insured persons to attend rheumatic clinics only at three places—the Red Cross Clinic in London, and at Sheffield and Glasgow. It should be extended to include spas.

A very ambitious programme for the health resorts was put forward by Dr. JAMES FENTON, chairman of the Central Council for Health Education. He satirized the idea of a spa as a place where old ladies or retired colonels were drawn in bath-chairs to their daily ritual. The spa was a national asset in the maintenance of physical fitness, but he feared it had been in danger of becoming a frozen credit. The new powers under the Physical Training and Recreation Act, 1937, would enable a spa to add playing fields, community centres, clubs, gymnasiums.

"I should like to see the British spas recognized as universities of physical training. I visualize the time when to have learnt, say, fencing at Bath will carry the same weight in its particular sphere as to have studied art at Florence; when we shall no longer talk of Swedish drill but of the latest Leamington methods . . . and when the natural rendezvous for tournaments, olympiads, and sports gatherings of all kinds will be the spa."

Government Indifference

Dr. ALFRED COX remarked on the lack of interest shown by the Government in the spas of the country. It was very different elsewhere. In France the spas were approved and helped by the Government, which owned one of them. In Germany half the spas were Government-owned, as were six, each with a climatological station, in Czechoslovakia. In Russia, with Government backing, the number of spas had trebled since the revolution. He mentioned also the interest taken by Continental universities in the teaching of hydrology. Here, so far as he could see, the Government had done nothing, save for half a page in the annual report of the Chief Medical Officer of the Ministry a couple of years ago drawing attention to the value of the spas in rheumatic diseases. Mr. W. MCADAM ECCLES suggested that the medical profession in Bath should set themselves to find out whether the incidence of rheumatism was less in Bath than in other cities. So far as he was aware, no paper had been written on the incidence of rheumatic fever in spa areas.

The undesirability of advertising individual health resorts was brought forward by Dr. C. W. BUCKLEY of Buxton. There was a disposition for a given resort to claim every virtue, and the resort which commanded the longest purse or the cleverest pen scored over all the rest. He deprecated spas descending to the level of proprietary medicines in their advertising. Publicity funds should be pooled and placed under the control of some association, which would use them as a means of educating Parliament, the medical profession, and the public in the objects to be attained.

A cold douche for the expectations of large sums from approved societies in support of spa treatment was given by Mr. HENRY LESSER, late chairman of the Consultative Council of the Ministry of Health. He said that the total sum which was allocated to the various treatment

additional benefits under the fourth valuation schemes in force during 1937 was £3,345,576. But of this sum dental benefit absorbed £2,174,920; ophthalmic benefit, £542,663; convalescent home treatment, £204,975; and medical and surgical appliances, £198,673. Additional benefit No. 16, under which payment for spa treatment might be made, came seventh on the list with £34,615 as the annual amount allocated. When the eighteen million insured persons were considered there was really no money available for benefits of this kind. It cost at least £3 a week to send a worker from London to a spa, and it was of no use sending him for less than three weeks. The total amount would be equal to the capitation fee for the one individual for twenty years!

Dr. W. EDGCUMBE of Harrogate protested against Dr. Fenton's proposals for the brightening of spas. The serious spa patient did not want these distractions. They diverted him from his cure. At least if the spas were to be used as centres of physical culture for the improvement of the national health, and their amenities—a word capable of wide interpretation—were to be increased, some enclosure should be made for the benefit of the ordinary spa patients so that they could get the necessary quietude. He also pointed out that while the spa hospitals had a waiting list the general spa clientele was diminishing. The old idea of large numbers of the wealthier classes paying an annual visit to a spa was slowly dying out. Dr. COLLIS HALLOWES of Torquay spoke on the desirability of having the publicity departments at all spas controlled by the medical profession; at least there should be medical representation on the publicity committee. Sir STANLEY WOODWARK pointed out some of the limitations under which the approved societies worked in the matter of convalescent or spa treatment. Lord HORDER, in replying to the discussion, said that his remarks had been intended to apply to health resorts in general, not to spas in particular. He agreed that a great disservice would be done to medicine if the spas were in any way disadvantaged in what they offered for the treatment of patients seriously ill.

Hydrological Methods in Joint Affections

The second discussion, presided over by Lieut.-Colonel W. B. BYAM, chairman of the Medical Advisory Committee of the Association, was on hydrological methods in diseases of joints. The visitors came to it directly from a very complete tour of the bathing establishment.

Dr. F. G. THOMSON of Bath opened with a comprehensive survey of the subject. It was his considered opinion that no case of rheumatoid arthritis was suitable for a course of hydrological treatment so long as the slightest sign of activity still persisted. The mildest form of balneological procedure was likely to set up an excessive reaction which did more harm than good. When the fire had burnt itself out and left only the charred remains in the form of distorted joints and twisted limbs, mild treatment by immersion baths, submerged douches, and possibly passive movements might do a great deal to relieve the residual pain and increase the range of movement. In the case of osteo-arthritis the indications were the very opposite to those in rheumatoid. Sedative treatment such as warm immersion baths with hot under-current douches or local hot packs was useful. He warned against extensive, and particularly forcible, passive movements to an osteo-arthritic hip or other joint. For gout there were three indications for treatment:

1. To put the gastro-intestinal system in a healthy state by suitable diet, low in protein content, and irrigation with mild saline or other suitable waters.
2. To ensure free elimination by diuretic or laxative waters, and by some form of bath treatment to induce free perspiration.
3. To stimulate the metabolism of the tissues generally and of the usually deficient liver in particular. This last treatment not to be undertaken until free elimination by bowel, kidney, and skin was assured.

Taking it all round, the most useful bath for chronic rheumatic cases generally was the oldest, simplest, and least spectacular—namely, the deep or reclining immersion bath with undercurrent douching or manipulative exercises, as the case might seem to require.

Sir HENRY GAUVAIN gave a brief account, illustrated by lantern slides, of the treatment at Alton and Hayling Island. At Hayling Island sea-bathing therapeutically was used, first for its effect on the general metabolism of the body, and secondly for its action on local lesions. He discussed the technique of sea-bathing and the pool treatment at Alton. Cases of infantile paralysis, rheumatoid arthritis, recovering paraplegia following spinal caries, and many cases of weak musculature or stiffened joints had derived much benefit from the pool treatment, with a depth of water of about $2\frac{1}{2}$ feet, and a temperature of between 90° and 100° F. The pool was not used for surgical tuberculosis, other than paraplegia, nor for cases of osteomyelitis or septic arthritis.

The use of hydrological methods away from spas or coasts was discussed by Dr. W. S. C. COPEMAN, physician, British Red Cross Clinic for Rheumatism in London. He set out the methods most widely used in this country:

1. The deep pool at 100° F.
2. Reclining baths, both of plain and mineral waters.
3. Manipulation douches, Aix or Vichy.
4. Packs of local peat (at most spas) or dried imported mud (at town clinics).
5. Vapour baths (there was a tendency at present to prefer hot air to vapour baths in the treatment of arthritic patients).
6. Foam baths.

He also mentioned the contraindications to hydrotherapy. He shared the view that no case of true rheumatoid arthritis in any active phase should ever be treated by hydrotherapy.

The Treatment of Rheumatoid Arthritis

Dr. C. W. BUCKLEY declared himself an unrepentant believer in the hydrological treatment of rheumatoid arthritis, except in the very acute cases. A case of rheumatoid arthritis in the severe stage had little or no capacity for reaction. That capacity had to be educated, and it could be better educated by hydrological methods, applied cautiously, than by any other. Hydrological methods were not necessarily institutional; there was no reason why the patient should not have properly supervised baths at home. Dr. EDGCUMBE insisted on a distinction between plain water as used in a town and mineral water as used at a spa. He claimed a definite advantage for the use of the latter, speaking now of its external use. The physiology of the action of plain water baths as compared with mineral water baths was very involved, and not enough experimental work had been done, but he thought that investigation did show with an immersion bath of mineral water a definitely increased reaction and very much less risk of any unfavourable reaction. On the other hand, Dr. GERALD SLOT asked whether there was any obvious reason why for treatment in London the water should not be artificially mineralized. If that were done, he wondered whether there would be any material difference between the waters as administered at Bath and other spas and as administered in London. There had been some talk of a three-weeks course of treatment, but that was not nearly long enough for rheumatoid arthritis. What was wanted was some easy form of home treatment. Mild hydrological treatment for rheumatoid arthritis was also advocated by Dr. FRANK CLAYTON of Leamington, but he pointed out that until some definite pathology of rheumatoid arthritis was discovered treatment must be unsure.

The use of hydrological methods in rheumatoid arthritis had another supporter in Dr. A. R. NELIGAN of Droitwich. The joint, he pointed out, was only the servant of the

muscle, and water was perhaps the best medium for developing muscles, a procedure best carried out in the therapeutic pool. He was surprised that there were in this country not more therapeutic pools fitted with certain forms of apparatus. Although America was behind Britain in hydrology it was in front in the provision of therapeutic pools. The concentrated brine which he had to use was of great assistance in re-educating muscles and joints.

Dr. DE BEC TURTLE stressed the value of home treatment. Even the humblest dwelling now had a bathroom, in which a great deal could be done under proper instruction. Dr. J. B. BURT of Bath mentioned points which in his view illustrated the difference between mineral water and tap water. Finally, the complaint was made by Miss FORRESTER-BROWN of Bath that so much had been said about joint diseases but nothing at all about joint injuries, on which, she thought, physicians might throw some light.

Mayoral Banquet

A civic banquet was given in honour of the conference, the Deputy Mayor (Mr. W. F. LONG) presiding in the absence of the Mayor through indisposition.

In proposing the toast of the British Health Resorts Association, Dr. F. G. THOMSON said that after some years the Association was one which now commanded great respect and exerted much influence, but at the same time it had great responsibilities. It had been formed at a time when this country was suffering from a severe financial setback, and an appeal was made to the public for "self-sacrifice"—namely, that it should visit the British health resorts instead of those resorts abroad thought to be superior to the ones in this country, which, however, need fear no comparison with any others. They had, Dr. Thomson thought, suffered from the ineradicable tendency in this country to run down anything British, especially when it was a question of amenities. He was inclined to think that undue prominence had been given to this aspect, and if they could convince the people of Great Britain that spa treatment was a serious business and not a stunt they would get much more support. As medical students, most doctors in general practice had had no instruction in spa treatment, and had therefore come to look upon it as something unorthodox and so to be avoided. Such men would not send their patients for spa treatment unless they could be convinced that definite benefit would result. Dr. Thomson then made a plea for systematic scientific investigations into the physiological properties and therapeutic actions of the waters employed in spa treatment. The British Health Resorts Association, as an unbiased body, might publish the results of such an investigation, which would then have an authority behind it not to be obtained if any individual spa published such results. Dr. Thomson coupled with the toast the name of the president, Lord Meston.

In response, Lord MESTON expressed the gratitude of the British Health Resorts Association for the splendid hospitality shown by the City of Bath. He assured Dr. Thomson that what he had said would be very carefully studied by the British Health Resorts Association, the early history of which Lord Meston lightly reviewed. It was, he concluded, a patriotic association, served by men who gave their time in no self-seeking spirit.

In proposing the toast of "The City of Bath," Lord HORDER said that Bath was renowned for its architecture, for its associations with monarchy, and for the part it had played in the world of fashion. The famous springs of Bath were hot by nature and not by artifice. Bath was royal; it was founded by a Saxon king, and kings and queens had frequented Bath as they had frequented no other place. In A.D. 55 the Romans decided that Bath had a contribution to make to hygiene. All our health resorts had a contribution to make now, a contribution to the solution of the problem of national fitness.