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EDITORIAL

The Dehydration of Foods

Experimental work on food dehydration has been conducted at the Low Temperature Research Station, Cambridge, at the Dunn Nutritional Laboratory, Cambridge, and at the Torry Research Station, Aberdeen.* The methods of drying permit either direct contact with a heated surface or through hot air. The drying of fish is an example of the first method, where steam-heated rollers provide the contact surface. Meat, eggs and vegetables provide an example of the second: meat and vegetables are dried on trays in a tunnel of hot air; eggs are dried by the spraying of liquid egg into hot air, the egg powder being collected on the bottom of the vessel. There is nothing new in the idea of drying foods, but in previous methods little attention was paid to nutritive value, keeping quality, and the preservation of the natural taste of the food. But all these things have received the full attention of modern research workers. Thus the biological value of meat remains unaltered provided the temperature of drying is not more than 80° C., and the 50% loss of vitamin B₁ in dried meat is no greater than that which occurs in ordinary cooking. There appears to be little or no loss of riboflavin or nicotinic acid. The vitamin content of air-sprayed dried egg equals that of the fresh egg. Ascorbic acid in reconstituted and cooked cabbage is 35% of the raw vegetable, and of the potato 25%; both figures compare favourably with those for the cooked fresh vegetable. (The vitamin content of the dried vegetable is about 70% of the raw.) The destruction of ascorbic acid by careless cooking is less likely with dried cabbage because of the absence of the enzyme. There is no loss of carotene during reconstruction and cooking of the carrot, and the loss of sugar need not exceed that incurred in cooking the fresh root.

It has been found necessary in all cases to cook or scald the foodstuff before drying, otherwise it loses colour or taste or consistency. The cooking or scalding has the effect of killing the enzymes, whose action would otherwise be deleterious during the drying process. The cooking or scalding introduces certain additional problems—for example, loss of meat juice and loss of vitamins from oxidation and leaching in the case of vegetables. To meet these difficulties, the juices lost in cooking are later poured over the meat during the drying process when it passes on the trays through the air tunnel. In the case of vegetables it is necessary to add sulphite to the scalding water (scalding is by two to three minutes' immersion in boiling water for cabbage, and 15 minutes for carrots); this helps to prevent the oxidation, while the loss from leaching during scalding can be largely prevented by re-using the same water, which gradually becomes saturated with ascorbic

acid. It is unfortunate that fish and meat have to be minced, eggs powdered, cabbage trimmed and cut into shreds (about 1/4 inch wide), carrots cut into strips (about 1/4 inch wide), and potatoes peeled and trimmed and cut into strips (about 1/4 inch wide), because the consumer is thereby prevented from eating the food in its accustomed form. Nevertheless, minced fish and meat have already proved attractive in canteens, and many chefs and housewives may wish to stick to the dried egg for cooking purposes.

We await the final solution of the problem of keeping. With few exceptions it is still necessary for the article to be kept in airtight tins in an atmosphere of inert gas (nitrogen) because of the action of oxygen and moisture. Packed in nitrogen, carrots, cabbage and potatoes will keep for at least 12 to 18 months at 15° C., and whereas cabbage and potatoes appear to be stable in ordinary packages up to six months, the carrot cannot be safely stored if exposed to air at all. Fish is more stable and will keep in lever-lid tins at ordinary temperatures and humidity up to a year.

Briefly there are seven imperatives for commercial food drying: (1) Water must be eliminated down to a low level—for example, 5% of carrots and potatoes, 3% of cabbage, 5 to 10% of fish. (2) Enzymes capable of destroying vitamins and affecting the appearance and taste must first be eliminated by heat. Meat and fish must be cooked, carrots, cabbage and potatoes scalded. (3) Oxygen must be excluded during the drying process and later from the packages. To exclude it during the drying process, sodium sulphite is sprayed over the article, while its exclusion from packages is by means of nitrogen in airtight tins. (4) Steps must be taken to prevent the reabsorption of moisture; this again requires airtight tins. (5) Drying must not take place at a temperature above certain limits, otherwise over-cooked and scorched tastes are produced and nutrients destroyed; thus the "ceiling" for the egg in the spray is 70° C., and for fish on the roller, 65° C. (6) Drying must not take place at too low a temperature because of the risk of bacterial action. (7) Only good quality products can be safely used.

The final product represents only a small proportion of the original weight. Fish mince, which is 100% edible, contains 75% of protein as compared with 16% in the fresh state; when submitted to a certain pressure 1 1/2 tons of protein can be contained in a 100 cub. ft. Carrots can be delivered to the consumer at one-twelfth of the original weight. One week's supply of all that is necessary can be packed into a quarter of the space. It appears likely that drying will replace refrigeration to a considerable extent. This is particularly so in the case of fish, for it would seem most uneconomical to continue to import refrigerated fish from Iceland when a drying plant installed there would so lighten the burden of transport; and there would still be enough fresh fish in the home market.

* Proc. Nutrit. Soc., 1944, 1, 113.

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Further extension of the process to other articles is likely to meet the difficulty of the glut by which nature provides an excess of a food at one time of the year, and it should become possible to spread supplies more evenly over the seasons. The question of the use of this method in the case of meat seems a little more questionable because of the interference with public appreciation which the mincing of a large proportion of our meat supplies would produce. The important factor in the post-war use of dried foods is the housewife. The problem of storage room is a large one in the working-class home, while in suburbia the small house and the flat with its kitchenette put a premium on larger space. We are living in the "can age."

Hours and Output in Industry

During almost a century that the office of medical officer of health has existed his functions have steadily increased in scope. The hygienist of yesterday is developing into the medical sociologist of to-morrow. More and more is it being recognised that conditions of industrial health are of interest to the public health service. Even though his officers may not be directly concerned with the hygiene of working conditions, yet they should have some knowledge of the daily environment of the workers who seek advice at the clinic or dispensary of to-day or the health centre of to-morrow.

A report issued under the auspices of the Medical Research Council* studies variations in output primarily from the point of view of their relation to hours of work. Not every member of the public health service is gifted with an enthusiasm for the study of what is admittedly one of the main props of his activity—namely, statistics—and the report will appeal chiefly to the statistician. While the investigators found that a reduction in hours of work resulted in an increase in output, it was nevertheless manifest that there were many other factors in operation which obscured a clear relationship. Among these were alteration in the design of the type of product made; mechanical and material difficulties; difficulties in supply of materials; alterations in the methods or conditions of work, in the tools and machines, in the standards and refinement of the finishing processes; factory reorganisation; and personal matters. The influence of all these is obvious, but the last calls for special comment. The report calls attention to the fact, already well known, that married women workers have heavy duties outside the factory and to the necessity for adapting the hours of work to their needs. The performance both of domestic duties and of factory work will be more efficient if the time-table allots to each its appropriate span of hours. The report indicates that when due allowance is made for the various other disturbing factors the optimum results appear to be obtained when the working hours per week for men are 60 and for women 55. An increase over these figures tends to be reflected in a fall in production and in more absenteeism. That production goes down and not up if hours of work exceed a certain period has long been known, and has been amply demonstrated in the early reports of the Industrial Fatigue Research Board. In the drive for "a hundred per cent. effort" there has been a tendency to forget the lesson already learnt in the last war and often a failure to recognise that intensive and prolonged effort merely defeats its own ends. The report concludes by drawing attention to the need for caution in interpreting records of factory output, since variations are rarely if ever due to single factors, and discusses matters for further investigation. It points out that, while for a given type of work and within the limits of reduction of hours dealt with in the report (5 to 11% for males, 3 to 8% for females in particular factories), a shorter working week may lead to increased output, it is not yet possible to make dogmatic statements about the relation between reduction of hours and alteration in output.

Dr. James Ferguson, M.O.H., Surrey C.C., was elected Chairman of the Council of the Royal Sanitary Institute, and took office on October 1st.

* "A Study of Variations in Output." Emergency Rep. No. 5 of the Industrial Health Research Board. By S. Wyatt *et al.* H.M.S.O. 1944. Price 4d.

THE COUNTRY DOCTOR AND PUBLIC HEALTH

By W. N. PICKLES, M.D., M.R.C.P.

William Budd, whom it is my delight to quote and to whom I shall refer later, made quite clear his belief that it was the opportunity offered, far more than the personal ability of the recipient, that made any observations of the country doctor of value. Not long ago, a blunt Yorkshire countryman told me that he did not reckon much of country doctors as doctors, but they were kind. This last word in the North Riding of Yorkshire has a wider application than usual and could be better rendered as "friendly." What he really meant was that we take a personal interest in our patients, enter into their joys and sorrows, and are well versed in all the small details which build up their relatively simple existence. He was quite right, the country doctor does become a part of his district. There are many things he has learned in the course of his daily life among his patients which no scientific investigation by a stranger would reveal. To be a success as a practitioner or investigator he has actually and figuratively to understand and speak the same language. When a patient comes into a country doctor's consulting room, he never has to ask the usual questions as to age, occupation and previous illnesses, as he already knows the answers to all of them. He will remember father and mother or even further back in the family history, and know from what sort of illnesses these suffered, which occasionally is a very great help. There is usually continuity in a country practice, as most of us show little inclination to change our habitat and retire with great reluctance, knowing that our real life is over when that happens. Not everyone has the temperament of Diocletian, content to throw aside the purple and grow cabbages.

I could say a great deal about the character of the dalesmen and daleswomen, of their shrewdness and ability, of that seemingly impenetrable crust which is only a crust hiding great friendliness and goodness of heart. They are delighted to help us in any investigation, and if we go the right way about it, even in such delicate subjects as heredity and consanguinity, they are slow to take offence. We have, like Sir Walter Scott, to sit down and listen to the old wife's tale, and many times have the tedious hours, waiting for the primipara to dilate, been enlivened by funds of wisdom and knowledge, and you will understand that when a countryman is convinced of the truth of some observation there is not a shadow of doubt in his mind. Jenner's saucy milkmaid, tossing her head and declaring that she was not frightened of small-pox as she had had cow-pox, had never a doubt that she was right, and the old woman who sold the dropsy-cure which William Withering adopted had no doubt that it was a cure. It is good really to know and believe something, and this brings me to a personal experience of country beliefs.

Farmer's Lung

There can be few country doctors who are unaware of the ancient tradition of the countryside that mouldy hay has a baneful effect on the lungs of those who work among it. Most country beliefs are worthy of thought, and although I had heard this one for many years I was inclined to believe what is no doubt true in some instances—that the condition was a temporary one due to the mechanical irritation of the dust. Looking back over the last 30 years, I can realise that if I had had that true humility and willingness to learn this, "Farmer's Lung," as I think it should be called, would have been identified on not a few occasions and much suffering avoided.

Five years ago I attended a man suffering from a chronic chest complaint marked by extreme shortness of breath on the slightest exertion, a most distressing cough with clear, sticky sputum (which was examined many times for tubercle bacilli with negative results), and a fair degree of wasting. He was naturally sent for x-ray examination and the report was indeed alarming. The condition was said to be difficult of diagnosis, but this lay between tuberculosis with pneumonic spread and diffuse carcinoma. In the circumstances the radiologist very aptly added that the man was in such a parlous

* A paper based on an address, given before the Yorkshire Branch on April 28th, 1944.

state that the exact diagnosis was probably of little importance to him. Further investigation was suggested, especially as to the existence of a primary growth. I found this report very hard to digest, especially as after some months—i.e., summer months—the patient's condition most definitely improved. Now I began to fall back on the man's own concept of his condition that his troubles were due to mouldy hay, the previous wet summer having burdened him with large quantities of this commodity. A little can be dealt with as it is considered good enough for bullocks, and most people will have heard of the farmer who had had an exceptionally good hay-time but grumbled that there was no "bullock-hay"; but a large proportion is as bad for the farmer's pocket as it is undoubtedly for his lungs.

This man never regained his "wind" and generally had a cough, but was reasonably well and able to do his work during the intervening years. Last summer there was what is called a "chancy" hay-time and his symptoms recurred during the winter. I therefore had him x-rayed again and the lungs showed a similar but less marked picture. Through the kindness of Dr. Wm. Goldie, the sputum was now examined by him and Dr. J. T. Duncan and was found to contain *Aspergillus fumigatus*, *candidus* and *niger*, with a mucor. This was after exclusion from hay for five days and mouth-washing and gargling with an alkaline solution to exclude direct contamination of mouth and throat.

During January a message was received to visit another patient, a man thirty years of age, who lived at a farm at a high altitude where hay is got with difficulty in a rainy season. He was said to have had influenza but to have recovered sufficiently to leave his bed and attend partially to his work. I found him just returned from a short walk on his land. He was literally gasping for breath, he had a short hard cough and he could hardly speak. His face was congested and his lips were blue. At the time I thought I might find signs of a large pleural effusion but I was surprised how little abnormal I did find in his chest. The excursion of his lungs was small, just less than an inch. Breath sounds all over the chest were just weak and there were a few squeaky rales at both bases. There was no dullness to be found anywhere. Had I on this occasion been at fault I should have been put right again, as both the man and his wife had decided on what was found to be the correct diagnosis.

This man's sputum was non-purulent, clear and sticky. No tubercle bacilli were found and cultures yielded a variety of moulds similar to those found in the former patient. Dr. A. S. Johnston, of Leeds, most kindly x-rayed his chest and has allowed me to reproduce his report: "The heart is not enlarged, but the borders are ill-defined owing to considerable mottling. This mottling is due to small collections of pin-point opacities giving a coarse granular appearance. These are most intensive in the basal area, close to the hilum. There is an old tuberculous focus in the left upper zone with a dilated bronchus leading towards it. Some of the main bronchi show peribronchovascular thickening. The appearances indicate an infection of the acini. Some glandular enlargement is almost certainly present, with lymphatic stasis. The appearances are consistent with a mycotic infection."

Looking back I can recall many patients who showed a similar syndrome to the same or a less degree, and I am convinced of the prevalence of this distressing complaint. It is a complaint which has not yet received more than the barest reference in the textbooks, but Dr. Richard Fawcitt, of Ulverston, has done an immense amount of work on this subject and in a large number of instances has been able to demonstrate the characteristic x-ray appearances. He himself was formerly in general practice in the country and fortunately listened to local tradition with brilliant results. He suggests as treatment increasing doses of potassium iodide, and my patients improved greatly on this, although some damage to the lungs must be permanent. It is difficult to give advice as to continuing their work as farmers, as further exposure to the moulds will certainly light up the symptoms. It might be difficult to find fresh work for a french polisher, suffering from dermatitis, but it is almost unthinkable for a farmer to change his job. Possibly he might

be induced to wear a gas-mask or similar contrivance when shaking out the hay, for it is then that the inhalation takes place.

Associated with the belief in the effect of mouldy hay in man is the conviction that it also causes "broken-wind" in horses. An enquiry at any racing stables will elicit the information that only the best possible hay is used for race-horses. Less than the best may produce a definite effect on the wind, as even "poor" hay may, I suppose, contain some deleterious matter. I can only name it thus, as up to date I have been unable to obtain any information that the condition in horses is due to the moulds which have such a baneful effect on man. One other detail I have learnt from my farmer friends is that if the hay is damped it can be fed to horses with more confidence, implying that it is inhalation of the dust which causes the trouble.

But we do not yet know all about "Farmer's Lung." Two men with similar symptoms to the others have given negative x-ray pictures, and yet I am convinced that their symptoms are due to mouldy hay, especially as one of them showed the usual moulds in his sputum. In these men, however, the attacks had a definite relation to exposure and it is possible that they were due to sensitisation. It is a matter of great importance in country districts, and as I am a great believer in Health Centres in country towns as centres for research, I recommend this subject to a group of doctors working in one of them in the future.

Goitre, Rheumatism, Tuberculous Glands

Another complaint on which the peculiar position of the country doctor entitles him to speak with first-hand knowledge is endemic goitre, and in this district we have seen much of this. I have found the subject most puzzling and the findings contradictory. If I were asked where in my own district it used to be most prevalent I could answer without hesitation, but I cannot explain why the rising generation is not affected. Granted the water supply in one of these villages has been changed and improved, but in the second and the one in which goitres were most prevalent it remains the same. I have seen it suggested that the additions to the diet purchased in tins at the village shop have produced the change, and certainly the modern generation does not regard them in the contemptuous way that its forebears did. Tinned sardines, pilchards and herrings are quite favourite articles of diet and would tend to supplement the very meagre supplies of fresh fish available.

One instance of cretinism occurred in these villages, which is not surprising, as endemic cretinism goes hand in hand with endemic goitre, and this fact similarly explains the one instance of myxoedema in a woman whom on my first introduction I found shivering in front of a blazing fire on a hot summer day, a surprising discovery which led to the diagnosis.

To pass on to acute rheumatism and associated heart disease, very properly attention has been drawn to poverty, malnutrition and bad housing as causative factors, but it is well to remember—and the family doctor in the country is in a position to see this more clearly than anyone—that there is a strong hereditary factor. In a remarkable family that I have had under my notice for over 30 years it was a very large and possibly the only factor, as its members were, if anything, better housed and better fed than their non-rheumatic neighbours, as they seem always to have been particularly prosperous. In this particular family, out of 53 descendants of a man, himself a victim who died before my time, 23 have suffered from rheumatic fever or had unmistakable signs of mitral stenosis.

There are two conditions which I feel as a personal reproach. Why should a district such as this I serve, where there is no poverty and where with few exceptions every child's health and welfare are very much its parents' concern, why, indeed, should it present so many instances of dental decay? Let Mellanby and her dental colleague, Dr. Helen Coumou, have given us new hope on the improved dentition of London school children, and I have an impression but I am afraid it is only an impression, that the same thing has happened in Wensleydale.

As to the other condition, I felt this reproach very keenly last year when a young Harvard physician who visited our children's sanatorium largely filled with little boys and girls suffering from tuberculous glands of neck, told me that these were the very first that he had ever seen. Tuberculous glands of neck are not at all unknown in English country districts, and of these we do know the cause and the prevention is simple. If the United States of America can banish this disease, so can we.

Natural History of Infectious Diseases

To pass on to the subject which has interested me, personally, for many years—that is the natural history of infectious disease—I should like to begin by quoting William Budd and another pioneer, Peter Ludwig Panum. Budd wrote:—

"It is obvious that the formation of just opinions on the question how disease spread may depend less on personal ability than on the opportunities for its determination, which may fall to the lot of the observer.

"It is equally obvious that where the question at issue is that of the propagation of diseases by human intercourse, rural districts, where the population is thin and the lines of intercourse are few and always easily traced, offer opportunities for its settlement which are not met with in the crowded haunts of large towns."

William Budd began his career by a spell of country practice in his native village in Devonshire, and it was there he made his observations on typhoid fever.

The second pioneer, Panum, was Budd's contemporary, and published his experiences in the Faroe Islands in 1846. They are available in a Delta Omega publication of 1940. As a 24-year-old graduate, he was sent to these islands by the Danish Government to investigate an extensive epidemic of measles, and in his delightful report pointed out the ease of tracing its spread. The isolated situation, he writes, of the villages and their on-the-whole-limited intercourse with each other made it possible in many, in fact, in most cases, to ascertain where and when the person who first fell ill had been exposed to infection and to prove that the contagion could not have affected him either before or after the date stated.

Surely what Budd and Panum wrote still holds good in many parts of rural England and opportunities are present for similar observations. That short and only possible exposure is so easy to trace in the broad spaces, where the people live in small villages or isolated farms. Intervals between sufferers in families are a fairly accurate guide to incubation period, but the observation of exposure for a single day or even less is the only really accurate method. In 1932, during a measles epidemic, a young man came under my care whose symptoms were first noticed on a Thursday morning. He was a carter and had been in the villages where the disease was rife, but after the most careful enquiry I found he had not been near any of the houses where there were patients. In the end, he asked me whether a certain man had been a sufferer. When I confessed that he had he related how he had sat next to him "Saturday afore last" in the "George," and that the second man was on his way to see me as he felt "queer." This exposure gave a definite 12-day incubation period. Spread over a number of years such heaven-sent examples mount up, but their number even in a country practice is not very large. Here again a group of doctors at a Health Centre, pooling information from a large number of patients, would be in a much stronger position than the single practitioner ploughing his lonely furrow. I have previously given instances of the short and only possible exposure in this and other diseases, and I may perhaps be allowed to repeat some of them.

1. An elderly retired ship's engineer commenced with symptoms of zoster on September 23rd, 1938. I was unable to find any possible avenue of infection in the neighbourhood, but one morning he showed me a letter from his son, who lives in a large seaport on the East Coast, stating that his small boy (six) had also suffered from zoster. It then transpired that my patient had spent the night of September 9th at his son's house and had been in contact with the boy on September 9th and 10th. This gives an incubation period of 13 or 14 days, and the little boy commenced on August 24th, he was manifestly infectious on the 17th or 18th day of his attack.

2. This is a tale of a wedding outside the district and the disease is mumps. Betty was a bridesmaid at this wedding on June 11th. She was a rather sick little bridesmaid and later was found to have this disease. On the evening of the 26th her mother first had symp-

toms and a few days later showed me a letter from her sister, the bride of the 11th, stating that she also began on the self-same evening. The incubation period in the case of the bride was definitely 15 days, and as the little bridesmaid was quite well the day before the wedding the duration in the case of her mother was probably the same.

3. Two patients suffered from lobar pneumonia in the same village in August, 1933: the first patient commenced on the 14th and was in contact with the second (who commenced on the 17th) on the former date.

4. Here is an incident of 'bus infection. On April 6th a young farmer fell ill, on the 8th a farm worker and a boy, and on the 10th a little girl. I found that they had all travelled in the market 'bus on March 28th. The conductress was not well and later was found to have measles. The four passengers proved to be her victims and the incubation periods respectively to be 9, 11, 11 and 13 days. The period of nine days in the farmer is shorter than usual. His initial symptoms certainly began on the 6th, but his rash appeared on the same day as the farm worker, i.e., 11th.

5. This also is a probable 'bus infection. A farmer, a little girl and a baby, all belonging to different families, commenced with German measles on May 28th, 30th and 30th respectively. Their sole common experience was a 'bus trip on the 13th, where it is likely that they were infected and in which case the incubation periods were 15, 17, and 17 days.

6. This example in infectious jaundice has I am afraid been repeated *ad nauseam*, but I am tempted to quote it as it drove me to think of an incubation period of approximately a month. Five entries and only five of this disease appear in my records in the week September 24th to October 1st. After exhaustive enquiries, I found that they had all attended a village fête in one of our villages on August 28th. I then had to hunt for the possible infecter and at last I found her. She was a young girl whom I had actually seen in bed on the very morning of the fête and who I never dreamt would be able to get up that day, as she only commenced with the disease on August 23rd. She spent most of the afternoon with one of her victims and was in the house of another, so that I do not think there is any doubt that she was the culprit and that therefore the disease was infectious at least on the sixth day. This gave incubation periods in the sufferers of 27, 27, 34, 28 and 31 days.

With regard to this and other apparently unimportant diseases, I quoted,

"Who goes gleaming
Hedge-side chance-blades, while full-sheaved
Stand cornfields by him."

but in the light of the importance that this disease has assumed in the present struggle, this no longer applies.

The conclusions reached in this very large recent experience are not vastly different from those reached in the study of the relatively unimportant epidemics in peace-time, and surely it can now be said that there is only one form of epidemic non-spirochaetal jaundice. I used to make a reservation in favour of the Gallipoli epidemic in 1916, but I have come to the conclusion that at this distant date the epidemiology cannot be satisfactorily verified. The role of homologous serum and of arseno-therapy jaundice and its connection or not with epidemic hepatitis is not yet clear, but is the object of intensive study at the present time.

These few instances of the short and only possible exposure, I hope, show the advantages which are held by the observer in a sparsely populated district. It is rare to be unable to trace the source of infection in an epidemic, and we therefore are in possession of useful information affecting not only the incubation period, but also the period of infectivity, the role of carriers and the methods of spread. Far be it for me or any other country doctor to hanker after a small-pox epidemic, but I have hopes that some country doctor at some future date will settle beyond question the controversy on the spread of this disease. Does the virus of small-pox spread over large areas, as "old man's beard" spreads over our fields in late summer? I myself was taught this about chicken-pox in my student days, and looking up my records with several villages at some distance from one another, simultaneously affected, it might have been the natural conclusion. However, I have always been able either to trace the conveyor of the infection between these villages or to discover that they had a separate origin outside the area. I have definitely no right to express an opinion on small-pox, as this disease has not crossed my path, but it is hard to believe that this disease acts in a different way from all other infectious diseases and especially from its little brother, chicken-pox.

Diphtheria Prophylaxis

Diphtheria prophylaxis is another subject about which I feel I ought to say something, but which on the occasion of the address I felt much diffidence in approaching as every one present probably knew far more about it than I did and one member of the audience had written the standard textbook on the subject. In my time in Wensleydale diphtheria has rarely appeared, but when it comes it kills, consequently I try to keep the number of inoculated children up to a safe level. Bearing in mind that in inoculated children added protection is acquired by actual experience of the bacillus, I was in much doubt as to whether it were possible to produce immunity in a child population where this experience was largely lacking. Dudley showed that in his immunised boys at Greenwich Hospital School there was a temporary rise in the carrier rate, but in Hamilton, Ontario, after many years of a high percentage of inoculations, carriers virtually disappeared, suggesting that the diphtheria germ had been induced to retire from that city. This is all to the good if one remains in Hamilton, Ontario, but if one becomes a Canadian soldier and is drafted to a camp in England it is possible that one may develop diphtheria and that is precisely what did happen.

It was therefore with some qualms that I undertook a Schick-testing campaign three years ago. I realise that the numbers are small, but such would be the experience of anyone undertaking an investigation in even a large country practice. I tested in all 306 inoculated children, and of this number I found 36 reactors—i.e., 11.76%. Fortunately, there had been two big inoculation drives and it was possible to form two groups. About a third were inoculated five years before with T.A.M. and a third two years before with T.A.F. In the T.A.M. group there were 15.13% and in the T.A.F. group 6.6% of reactors. Omitting the control and using only the toxin, a method advocated by Tudor Lewis, and reading as positive even slight redness at the end of a week, certain pseudo-reactions were probably included, so that the total number of 36 reactors in these children is not discouraging.

One has to employ tact in an immunisation campaign, and as our toil—and it is a toil in a country district—does not appear to have been wasted I am glad I used the milder antigens in the past and was able to keep the reactions very low, approaching, as I was, unimmunised children of all ages. Among all these children I never received a message to visit any one of them after inoculation, so that few parents were opposed to the procedure. The only children we are now inoculating are in the pre-school group, and in this group A.P.T. is used with similar freedom from reactions.

There is so much to learn and no striking discoveries are likely to be made in a study of the natural history of infections. Gilbert White, whom we must study carefully if we wish to make any progress, realised this to the full in his own sphere. There is wonderful advice in one of T. H. Huxley's letters with which I should like to end this paper: "Sit down before fact as a little child, be prepared to give up every preconceived notion, follow blindly wherever nature leads, or you shall learn nothing."

The war-time upward trend in the birth-rate in England and Wales was maintained during the first three months of this year. The Registrar-General's Return of Births, Deaths and Marriages for the quarter ended March 31st, records a total of 184,145 live births, or 17.9 per 1,000 of the population, the highest first quarter rate since 1926. There were 11,874 more births than in the first three months of 1943, when the rate was 16.9. Boy babies numbered 94,964, giving a proportion of 1,065 boys to every 1,000 girls. The average for the ten preceding first quarters was 1,060. Births registered exceeded deaths by 37,941.

The provisional infant mortality rate, 58 per 1,000 related live births, was 14 below the average for the ten preceding first quarters, and was the lowest rate on record for this period of the winter. A death-rate of 14.2, compared with 13.5 during the same period a year ago. From 1938 to 1942 the average rate was 16.2. Fourteen cases of smallpox were notified during the quarter, three of which were fatal. The three deaths and all but one of the cases were associated with the outbreak of smallpox at Mount Vernon Hospital, Middlesex.

DIPHTHERIA IMMUNISATION IN A RURAL AREA OF NEW ZEALAND

By C. W. DIXON, M.D. (LOND.), D.L.O., D.C.H., D.P.H.,

Medical Officer of Health, Department of Health, New Zealand

A diphtheria immunisation scheme for any area should be considered from a number of aspects, and the results obtained by different methods of approach should be assessed according to the varying difficulties in different kinds of district. The size of the area in itself is of importance only in relation to the staff available. The geography and the density of population, in its broadest sense, are very important factors. The health district—the North Auckland—under consideration is a long peninsula 40 to 50 miles wide and 150 miles long, with an area of 4,860 square miles and a population (April, 1941) of 68,180, of whom 20,000 are Maoris. This gives a population density of approximately 14 persons per square mile, but the population is very dispersed. Unlike what obtains in many English counties of comparable population density, there is a relative absence of towns or villages, or "population aggregates." The largest town has 7,600 inhabitants and the next 2,200. Of the total of 68,180, only 10,800 live in "towns" of over 1,000 inhabitants, and only 14,600 live in localities of over 500 persons. The size of the area and the difficulties of transport are accentuated at present by the shortage of petrol and tyres. Reliance on any system of fixed clinics or the use of schools would have hardly touched the pre-school population. In fact, welfare centres exist only in the two larger towns and do not cater for the Maori population. They are run by an independent voluntary child welfare society, not under the control of the M.O.H. The nurses themselves are as helpful as the difficulties of dual control allow them to be. One school medical officer has been available most of the time, but was fully occupied in trying to keep school medical inspection work going among about 13,000 school children. While doing school work he carried out immunisation in the schools in conjunction with one district nurse. He immunised approximately 450 children in this area. Apart from the adverse factors, there are also some favourable ones in the area. The general education and standard of living of the white population is fairly good. Large numbers of fathers are in the Forces; they have become injection conscious and therefore unopposed to immunisation. The Maori population has become used to annual T.A.B. injections of school children. News of an isolated case of diphtheria spreads quickly and stimulates the population to action.

Recent Experience

In seven years there have been 259 cases of diphtheria, of which 38 were in Maoris. During the last six years there have been 13 deaths, of which five were Maoris. Laboratory technique is poor, and no typing of K.L.B. is done. From the available mortality figures it would appear that at present the less virulent *mitis* strains predominate. Moreover, future study of diphtheria in relation to the state of immunity of the child population in this area will be handicapped by lack of knowledge of possible changes in type of the infecting organism. The high mortality of Maori cases is due to a higher proportion of late untreated laryngeal cases.

In both Maori and European cases there is likely to be an underestimate, due to scattered medical services, and the likelihood of self-recovery of mild undiagnosed cases. Sub-acute laryngitis in Maori infants necessitating tracheotomy is not uncommon, and it would appear that many of these are cases of laryngeal diphtheria. The mortality of the Maori group is at least 15% and the European about 5%. The higher rate among the former would suggest either delay in obtaining treatment or that only the severe cases are diagnosed and seen in hospital.

Population at Risk

The total population of the district is 68,000. The 48,000 Europeans have a birth-rate of 22 per thousand, giving approximately 7,500 children of school age and 3,800 pre-school. The Maori population numbers 20,000 with a birth-rate of

44 per thousand. There are approximately 5,600 Maoris of school age and 3,400 pre-school children. From the point of view of child population, and therefore of the immunisation problem, the area would be more comparable to an English county of about 100,000 inhabitants.

Immunisation in the Area

At intervals from 1933 onwards small numbers of school children had been immunised, mostly during minor epidemics in schools. Between 1939 and 1941 some immunisation had been carried out in the larger towns, but with no demonstrable effect on incidence. Opinion is widespread in New Zealand that diphtheria is rare among Maoris and that they have a racial immunity to the disease. In this area diphtheria is not rare in Maoris, and during the last ten years they have accounted for approximately 14% of the notified cases and 35% (5 out of 13) of the deaths. It is therefore the policy to immunise both European and Maori alike.

Until 1942 immunisation was performed with formol toxoid—three doses with a preliminary Maloney test. The need for four injections was administratively unsatisfactory. It appears from the records that it was difficult to deal satisfactorily with the odd missed injections and it has been estimated that approximately 10% of the cases beginning immunisation by this method did not complete their course or did so only as the result of extra visits. In August, 1942, the writer became M.O.H. of the district, and A.P.T. was used. Personal visits were made to schools, and approximately 1,000 children were immunised in three months. There were 16 district nurses (health visitors), and these were trained in immunisation technique. These nurses are relatively young, many straight from hospital and without public health training. Most of them do domiciliary as well as public health work, and all are used to giving T.A.B. injections. It was therefore easier to train them than it would be to train the average English health visitor. Because of their clinical experience nearly all the nurses were allowed to carry on after administering a dozen or so injections under supervision. They received instructions on technique and policy and some general information suitable for answering questions. They were given full written instruction on the points discussed in this article. Equipment is supplied, with towels, dressings, all glass syringe, needles and a small enamel dish with lid for sterilising. The diphtheria immunisation material (syringes, needles, etc.) are not used for any other purpose. This is felt to be an essential additional safeguard where other clinical work is done. The lid of the dish acts as a convenient tray for the syringe and needles. It was emphasised that the nurses should arrange their equipment in a neat and orderly way and should develop an assured technique, this having propaganda value. The dosage used is 0.25 c.c. and 0.5 c.c. at approximately one month's interval. The syringe was marked at the 0.25 mark and the 0.5 mark with red paint. This enabled the nurse in the early days to assist in filling her syringe accurately and quickly. The nurses have by now had so much experience that they have not bothered to replace the markings that have washed off. Since these instructions were issued the A.P.T. has improved in quality, and no trouble is experienced with lumpiness. The adrenaline provided has never so far been required.

Working of the Scheme

The scheme began on January 1st, 1943, and was intended as a permanent immunisation service. No local propaganda was instituted and no notices in the Press were allowed. General nation-wide propaganda through cinema and Press had been conducted, but the impression in this district is that it is of little value. Entire reliance has been placed on a policy of "infiltration"—personal contact between the district nurses and the family. There has been no opposition from private practitioners, and some moral support from medical superintendents of public hospitals. A letter was sent to each G.P. telling him that the district health nurse was doing immunisation work and asking for his support. The co-operation has been excellent. Although one or two practitioners have asked for material and immunised a few children, the majority send the cases on to the district health nurse.

In the more scattered rural areas the nurses rely entirely

on personal contact for their arrangements, visits, etc., but in the towns some of the nurses use a printed letter giving the times when immunisations will be done at the infant welfare centres. When the scheme was started, it was emphasised that the nurse should not concentrate on school children to the exclusion of pre-school children in trying to get quicker results (larger figures). Every nurse is provided with a "baby-book" and each month is sent the list of notifications of births in her district, so that during the first six months she can prepare the ground for immunisation between the ages of six and nine months. Women are encouraged to bring their infants to a clinic or school, but if this is impracticable, as it so often is, the child is immunised in the home, or a group of neighbours visit the most convenient house. No preliminary Schick-testing has been done, and in view of the age limits it was not expected that reactions would be serious enough to influence public opinion. The procedure would be almost impossible under present arrangements. No post-Schick testing has been carried out.

Reactions have been very slight. General reactions numbered eleven and have shown no consistent grouping in first or second injections. The instruction to do second injections in spite of general reaction in the first has shown that reactions after the second dose are often absent. The nurse can appeal to the M.O.H. if the first-dose reaction really scares her from the second one. I only know of three cases in which the second injection has not been made—all cases of allergy.

On August 1 the whole district was reorganised and the district nursing (health visitor) staff increased from 16 to 20. This caused a slight break while the new nurses were trained and got to know their districts. In the first six months an average of 360 children were immunised a month. In the last six the average was 640 children a month. The steady rise in the proportion immunised (Maori and European) is indicated by these figures:

December 31st, 1942	0	5	8.7%	5	15	19.7%
June 30th, 1943	0	5	27%	5	15	24%
December 31st, 1943	0	5	55%	5	15	37%

By December 31st, with 55% of the pre-school immunised and 37% of the school children, a situation has developed which should prove interesting, in that both now and for some time there is likely to be a much higher proportion of pre-school children immunised than of our school children. This is the reverse of what is usually obtained in most districts, where diphtheria immunisation working principally round the schools has resulted in a very much higher rate in the school children than in the pre-school children. What effect this might have on the future epidemiology of diphtheria in this district remains to be seen. It is anticipated that within the next three months the rate in the pre-school children will probably be in the region of 60%. As time goes on, automatically the rate in the school children will increase, even without raising our age limit above seven, which will be done when the pre-school rate is up to the maximum, until ultimately, at the end of approximately eight years, we should have a solid immunity in the school children and a consistently high level of immunity in all children above the age of six months.

Conclusion

1. Details are given of a scheme for diphtheria immunisation in a scattered rural district of New Zealand using district nurses (health visitors) to do the work.

2. No local propaganda was instituted, reliance being placed on personal contact between nurse and family.

3. Two doses of A.P.T., 0.25 c.c. and 0.5 c.c. were used at one month's interval, concentrating on immunising children from the age of six months to seven years.

In one year 6,300 children were immunised, thus raising the pre-school immunisation percentage from 8.7 to 55 and the school-children 19.7 to 37. Both Maori and European population were treated alike.

The immunisation state at June 30th, 1944, was for ages 0 to 5 years, 70%, and for ages 5 to 15 years, 44%.

This paper is published with the kind permission of Dr. M. H. Watt, Director General of Health. The opinions expressed are personal and do not necessarily represent the views of the Department of Health.

MASS RADIOGRAPHY AT THE CROSS ROADS

By E. G. W. HOFFSTAEDT, M.D. (BERLIN),

Clinical Tuberculosis Officer, Doncaster

There is a difference of expert opinion whether routine mass-radiography, as recommended officially, is in its present form of application really the ideal way to early diagnosis of pulmonary tuberculosis. In this connection the following case of pulmonary tuberculosis, certainly not a unique one, perhaps deserves some attention.

A naval rating, 20 years old, was recently admitted to the Doncaster Sanatorium with this history: No tuberculosis in the family; no previous disease of any significance. For about two and three-quarter years on active service in the Navy. Passed routine mass-radiography examination satisfactorily in April, 1941, and in July, 1942. There is no reason to suspect that anything was then missed on the miniature film. In June, 1943—i.e., eleven months after the last x-ray—patient complained of lassitude and gradually lost weight. He had no cough then. His symptoms were ascribed to the heat. (He was at Gibraltar.) Two negative x-ray examinations, "confirmed" by the apparent absence of cough, probably dispelled any suspicion of tuberculosis. His condition deteriorated, cough with sputum appeared, and in September, 1943, x-ray revealed pulmonary tuberculosis and the sputum was positive.

It is well known that phthisis can develop rapidly. It is not at all unusual to find a fairly far advanced tuberculosis of the pneumonic type only a few months, or even weeks, after a negative x-ray examination. Diagnosis is often missed when the symptoms are vague and clinical signs are absent in an early or even in a fairly advanced case of phthisis. But the significance of this case lies in the fact that the circumstances are quite different from those of ordinary civilian life. Though his symptoms were suggestive enough if only the possibility of tuberculosis had been considered, the diagnosis was either not thought of, or, if so, was discarded. The point is that routine mass-radiography, though applied twice, failed because it was applied at the wrong time, when the man was perfectly healthy and when—after the experience gained in the Navy—the probability of discovering an asymptomatic early case of tuberculosis was as low as 0.1 to 0.2%. Thus this patient had not been x-rayed at the time when he should have been x-rayed, and when the probability of detecting a tuberculous lesion was high. Though he had reported sick in time, a delay of three months occurred until the diagnosis was thought of and consequently established. Granted, however, that routine mass-radiography, as applied in H.M. Forces, serves the special purpose of sifting, even there it is not repeated often enough to secure early diagnosis of those who pass successfully through the sieve but subsequently develop the disease. How, then, can we expect a single radiological mass-survey among the civilian population to contribute materially to the early diagnosis of pulmonary tuberculosis?

Some Drawbacks

First of all, mass-radiography with the civilian population is not compulsory as it is for H.M. Forces. Secondly, periodical re-examinations are out of the question until the necessary number of machines and trained personnel are available: we may have to wait years for this. Again, an unknown number of cases with symptoms, where the examination would be more fruitful than amongst symptomless, healthy people, may, and probably will, evade the examination offered. This method tends to be rather a contraselective measure. The results achieved so far are poor—namely, about 1% positive findings among the examined factory workers. The percentage will probably be less in other sections of the population. In addition, the psychological effect on the average person, after the x-ray verdict of a healthy chest, may become disastrous in the case of tuberculosis developing some time after the procedure of routine mass-radiography. A normal x-ray will usually leave the candidate with a false feeling of security. This, I am afraid, will more often than not also

influence the doctor. How often, when the first symptoms occur, will the patient deceive himself as well as his doctor! The suggestion that it cannot be serious will be supported by the negative result of the "recent" x-ray (even if as far back as eleven months). That this is likely to happen is borne out by an interesting investigation "On the Delay in Diagnosis and Sanatorium Treatment of Phthisis," by B. Mann.¹ He found that the time lag between the first appearance of suggestive symptoms—such as haemoptysis, loss of weight, debility, etc.—and the date of the first consultation with a doctor varied between three weeks and eight months—average about three and two-third months. The delay before the general practitioner referred his patient to the dispensary or consultant covered a further period of three and one-third months average. Routine mass-radiography, carried out with the presumably healthy population, will not shorten this delay of seven months between the onset of symptoms and the diagnosis. It may easily increase this loss of valuable time by dispelling suspicions which otherwise would lead to more thorough examination.

An Alternative Way

Looking at routine mass-radiography of the civilian population in the light of these experiences, my conclusion is that this method, applied as it is, fails, and is bound to fail, fully to achieve its aim. Much better use should be made of such a powerful weapon. C. H. C. Toussaint and E. K. Pritchard (among others) fully realised the futility of routine mass-radiography as an aid to the early diagnosis of pulmonary tuberculosis so long as it is employed in examining cross sections of a presumably healthy population. They found—I believe—the right way to exploit this powerful weapon in the fight against tuberculosis. They have started promising work at Bermondsey and at Southwark by "fishing in the better stocked waters of those who have already symptoms of respiratory disease." With the full co-operation of the general practitioners of their district they have all suspicious cases seeking medical advice x-rayed and so diagnosed at an early stage.

Short of miniature mass-radiography units, and more so of trained staff, the few units there are should be employed in the most effective way. This will be possible only by the use of mobile units. Fortunately the trend is towards mobile rather than stationary units. An efficient and up-to-date diagnostic tuberculosis service should divide the work between the mass-radiography unit and the dispensary staff. An organisation could easily work—in principle—as follows: One mobile unit (installed in vans) could easily serve, for example, a circumscribed, densely populated industrial area. It could visit each district once fortnightly or at other stated periods. It should return every week-end to its centre (home station) for repair, overhauling, refilling of stocks, etc. The timetable of the rota service should be worked out for at least three months in advance and be distributed to every general practitioner within the area, to the industrial medical officers and to the school medical officers. The unit would then deal with (1) every patient with suspicious symptoms brought to the notice of the doctor; (2) with all the known contacts of tuberculosis patients. X-ray negative cases, if the symptoms did not subside, and all x-ray negative contacts, should be re-x-rayed after three and six months. This routine re-examination, not provided for under the official scheme, is of paramount importance. We know that one negative x-ray, taken at the beginning of the disease, cannot definitely exclude the diagnosis in a suspicious case. Repetition of x-ray examination within three months is a reasonable safeguard. One exception to the proposed scheme is that all cases with haemoptysis should be referred to the tuberculosis officer forthwith. The suspicious or x-ray positive cases would have to be referred to the local dispensary to be dealt with by the usual routine.

Such an organisation would have the following advantages:

1. The tuberculosis officer and the x-ray plant of the dispensary would not have to deal with negative cases, thus saving much time, money and energy. The tuber-

culosis officer and the dispensary staff could concentrate on those cases in need of help and advice.

2. The general practitioners could really make the widest possible use of chest x-ray examination. At present even the most conscientious doctors are somewhat reluctant to send every patient with any little symptom to the dispensary for two reasons: (a) In order not to overburden the dispensary staff with trivial cases; (b) because many a patient resents going to a place stigmatised as a tuberculosis centre, however camouflaged. But nobody would refuse to be x-rayed at a neutral examination centre.

3. The periodical x-ray examination of all the contacts by mass-radiography is much simpler and more economical than by routine examination at the dispensary.

4. The exposure of non-tuberculous people to tuberculosis infection in overcrowded dispensary waiting rooms would be avoided.

Mass-radiography units used in this way would promote co-operation between the general practitioners and medical officers concerned, and make available much clinical and scientific material for research.

To examine a cross-section of the general population is not the best way to detect early cases of tuberculosis. The present application of routine mass-radiography is uneconomic, and the results so far obtained are out of proportion to the expense, material, time, and expert labour spent on it. It is the general practitioner who is the first clearing station for tuberculosis. To secure early diagnosis on a wide front we should start with immediate mass radiography—at a neutral diagnostic centre rather than at the tuberculosis dispensary—of all patients seeking advice for any suggestive symptom. This demands full co-operation with the general practitioners, and for post-graduate tuberculosis courses to make them still more tuberculosis-minded than is the case at present.

"Early diagnosis" of pulmonary tuberculosis, however, is not an end in itself. The end is to treat tuberculous patients at an early and responsive stage of the disease. There must therefore be adequate institutional facilities. "It is useless to insist on the need for early diagnosis, if treatment is delayed once the diagnosis has been made. . . . Clearly the value of diagnosis at an early stage of the disease will be stultified if immediate treatment is not available. Special provision for such prompt treatment is therefore essential."³

My thanks are due to Dr. J. F. Galloway for permission to publish this paper.

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OBITUARY

ALLAN SEMPLE, M.B., CH.B., D.P.H.

We regret to record the recent death at the age of 61 of Dr. Allan Semple, M.O.H. for Carlisle City.

Allan Semple was educated at Bearsden Academy, Dumbartonshire, and at Allan Glen's Technical School, Glasgow. He studied medicine at Glasgow University, where in 1908 he qualified M.B., Ch.B. with distinction. He entered private practice in Bristol, where in 1915 he received the D.P.H. of the University. He then obtained a commission in the R.A.M.C. and acted as Medical Officer in hospital ships in the Mediterranean, and later as M.O. of an artillery group in France. In 1917 he was appointed Junior Assistant M.O.H. for Carlisle, and in 1921 Senior Tuberculosis Officer. On the retirement of Dr. Beard in 1930, Dr. Semple was appointed M.O.H. and School M.O. for the City. He was also superintendent of the City General Hospital and the infectious diseases and maternity hospitals. His untiring efforts to create an efficient first-aid and ambulance service for the Civil Defence imposed a burden on his strength.

Dr. Semple was a keen golfer and a Freemason. He is survived by his wife, a son (Capt. T. David Semple, R.A.M.C.) and a daughter.

NEWS AND SUMMARY

HOUSING

Important recommendations on the part to be played by private enterprise in post-war housing are contained in a report submitted to the Minister of Health by his Central Housing Advisory Committee. The Report* was prepared by a Sub-Committee on Private Enterprise Housing under the chairmanship of Sir Felix Pole. Evidence was taken from representatives of different sides of the building industry, from the National Federation of Housing Associations, the Building Societies Association, and other bodies. The sub-committee set up a special panel to consider how best to control the standard of construction of houses built by private enterprise, and a report by this panel is appended to the main report. The Committee conclude that "given favourable conditions, the housing needs of a large section of the people of this country can be met without assistance from public funds. The conditions required include cheap money, a plentiful supply of labour and materials, building costs in close correspondence with the cost of living, and stability of values. Apart from war-time shortages and restrictions, the chief obstacle to the resumption of building by private enterprise on a pre-war scale is the level of building costs, which are out of scale with the cost of living. Correlation of building costs with the cost of living is an essential condition of a high output by private enterprise. It will doubtless be a primary aim of housing policy in the immediate post-war period to secure that the cost of building is brought into accordance with the cost of living and the general level of wage rates."

The Report recommends that "if private enterprise is to maintain its position in the post-war period, it must produce a considerably larger proportion of houses for letting. The participation of the building societies and similar bodies is essential if this is to be achieved." It assumes that in regulating the amount of building work, the highest priority compatible with other essential amenities will be allotted to house-building, and that no building of a luxury type will be permitted until the most urgent housing needs have been met. Steps should be taken to ensure that an undue share of labour and materials is not absorbed in building very large houses, "and we should like to see priority accorded to houses intended for letting."

A conference on maternity and child welfare, which has been arranged by the National Association of Maternity and Child Welfare Centres and which was postponed in July last owing to the restriction of travel, will be held on November 23rd and 24th in the Big Hall, Friends' House, Euston Road, London, N.W.1. The Minister of Health has promised to be present on the morning of November 24th to give his Presidential Address, the subject of which will be the rebuilding of family life after the war. On the morning of November 23rd Miss Elizabeth Denby will speak on housing, Professor James Young on social and health services, Dr. Fraser Brockington on the viewpoint of the rural areas, Miss F. Hawtrey on nursery and nursery school provision, and Dr. Jean Macintosh on education as it concerns the family. In the afternoon Group Captain J. A. Cecil Wright will speak on population problems, Mrs. A. D. S. Large on the housewife and mother, Dr. Helen Standing on family life during the mother's confinement, and Dr. Innes Pearce on the family club. The following day, November 24th, the theme will be "broken family life." Dr. A. B. Gardiner will discuss illegitimate children, Mrs. Rackham the mal-adjusted and delinquent child, Mr. C. E. Bridges substitute homes. A bookstall will be open throughout the conference and there will be various exhibits, including sections of the housing centre exhibition and of the travelling exhibition of the National Council for Maternity and Child Welfare. Owing to catering difficulties people are advised to bring lunch with them. A limited number of lunches and teas will be available at Friends' House and application for these, which should be made to Miss M. R. Lovelock, 117, Piccadilly, London, W.1, will be dealt with in rotation. Tickets for the conference, 3s. for one day, 5s. for two days, are obtainable from the same address.

Dr. R. C. Wofinden regrets that he omitted to add to his article on "Problem Families" (*PUBLIC HEALTH*, September, 1944, p. 136) a note of thanks to Miss J. Barraclough, Senior Health Visitor of Rotherham, for the collection of figures referring to the problem families.

*Private Enterprise Housing (H.M.S.O., York House, Kingsway, W.C.2), price 1s., post free 1s. 2d.

BOOK REVIEWS

Hutchison's Lectures on Diseases of Children. Ninth Edition. Revised by Alan Moncrieff. 1944. London: Edward Arnold. Pp. 478. Price 21s. net.

This volume has been guide and friend to generations of medical students and House Physicians in children's hospitals and departments of paediatrics since it first appeared in 1904. Its starting-point was a course of lectures delivered by Dr. (now Sir Robert) Hutchison at the London Hospital. The approach to the subject was essentially practical and clinical, with the emphasis on treatment. To the student familiar with the uninspired presentation characteristic of the medical textbook, the charm of Hutchison's style was like finding an oasis in a desert. Since 1904 the book has gone through eight editions and several reprintings, and now appears the ninth edition, revised for the first time by someone other than the original author, by Dr. Alan Moncrieff. The principal alterations have been made in those sections dealing with infections in the newborn, the treatment of infantile diarrhoea, coeliac disease, threadworms, and congenital heart disease. In the account of icterus gravis neonatorum, a summary is made of recent work on the Rh factor. In future editions the authors might consider the question of giving references to the literature at the end of each section, as this would enhance the value of this already valuable volume.

So You're Expecting a Baby! By ARTHUR C. GEE. Bristol: John Wright & Sons, Ltd. London: Simpkin Marshall (1941), Ltd. Price 9d. Postage 1d. Pp. 36.

Dr. Gee, once more as the kindly uncle—this time on "What a Young Wife Ought to Know." In spite of much breezy reassurance, Dr. Gee considers labour "a messy, trying business," which has to be got over with the help of anaesthetics and the reflection that "the baby was well worth the nine months' embarrassment and the labour pains." There is no suggestion of the brooding happiness of pregnancy or of the exaltation of delivery. Although the style is colloquial, the tone of the book tends to the Early Victorian. A modern note and an unfortunate one is sounded in the assumption that breast feeding can be successfully combined with the rush and scurry of modern life. The poor girl is hardly allowed a week in bed after the confinement before she is exhorted to put on her high-heeled shoes and go out with her husband. And the objectionable nail-brush has reappeared in the preparation of the nipples.

CORRESPONDENCE

POST-GRADUATE EDUCATION IN PUBLIC HEALTH

To the Editor of *PUBLIC HEALTH*

SIR,—I read with great interest your editorial on postgraduate education in public health. I agree that a qualification in this specialty should carry as much social credit, in the medical sense, as an F.R.C.S. or an M.R.C.P., but unfortunately, for psychological reasons, this recognition is unlikely to be given to the holder of a mere D.P.H.

The obstetricians and gynaecologists, recognising their difficulties, set up the Royal College of Obstetricians and Gynaecologists. The M.R.C.O.G. is rapidly assuming the status of the F.R.C.S. in the gynaecological world. I suggest the time has come when we should act likewise.

I am, etc.,
G. E. DONOVAN,
M.O.H., *Liverpool and Gower.*

The Committee of Privy Council for Medical Research have appointed Alan Nigel Drury, C.B.E., M.D., F.R.S. (Director of the Lister Institute of Preventive Medicine) and James Calvert Spence, M.C., M.D., F.R.C.P. (Professor of Child Health in the University of Durham and Honorary Physician to the Royal Victoria Infirmary, Newcastle-upon-Tyne) to be Members of the Medical Research Council from October 1st, 1944.

THE SOCIETY OF MEDICAL OFFICERS OF HEALTH

YORKSHIRE BRANCH

President: Dr. E. C. Benn (Medical Superintendent, Seacroft Hospital, Leeds).

Hon. Secretary: Dr. J. M. Gibson (M.O.H., Huddersfield).

A meeting of the Branch was held in Leeds on May 26th, 1944. Twenty-two members and two guests were present. The minutes of the meeting held on April 28th were approved.

Sir Wilson Jameson, the Principal Medical Officer of the Ministry of Health, was welcomed by the President. Sir Wilson expressed his pleasure at having the opportunity to be present at a meeting of the Branch. He was impressed by the interest taken in matters affecting the Society, and hoped that they would give further attention to the proposals in the White Paper. This should not be regarded as a "cut-and-dried" scheme. Discussion was desired, and it was hoped that constructive suggestions would be forthcoming. The views of the B.M.A. would have to be considered before a policy could be decided upon, and postponement of the Annual Representative Meeting would give further opportunity to members of the Society to discuss the various problems and to put forward what he hoped would be helpful suggestions.

Dr. H. M. Lecte, Medical Superintendent of the Hull City Hospital and Sanatorium, then read a paper on diphtheria in Hull. He reviewed six years' bacteriological typing in Hull, from 1938 to 1943. Some 2,000 infections, the great majority clinical cases, had been observed. The medium used was Neill's blood tellurite agar, with which, taken in conjunction with fermentation tests, it was possible to distinguish ten types and sub-types of *C. diphtheriae*, as well as some three or four varieties of diphtheroid organisms. Clinical cases were divided into faucial and laryngeal, and further subdivided in terms of severity. The bacteriological and clinical findings were correlated. The declining case fatality and toxic rates could be ascribed only to an increase of immunity in the population as a whole, brought about by a combination of naturally and artificially acquired immunity. A case fatality rate of less than 1% was regarded as a possibility of the near future.

*The Branch held its Annual Meeting of the 1943-44 Session at Leeds on June 30th, 1944.

The President, Dr. E. C. Benn, presided at a luncheon of the Branch, and there were also present 56 members and guests.

After the loyal toast had been honoured Major-General Sir Ernest Cowell proposed the health of "The Society of Medical Officers of Health."

Dr. R. H. H. Jolly, the President of the Society, in reply, said how much he had enjoyed listening to Major-General Cowell. He then went on to discuss matters which had claimed much of the Society's attention during the year: (a) the Education Bill; (b) the White Paper on the Medical Services; (c) the revision of the Asquith scale of salaries; (d) the future training and examination of men and women intending to take up work in the Public Health Service. He referred to the revival of the School Medical Group, and hoped the Yorkshire Branch would assist in this. He would also like to see a closer liaison between those working in maternity and child welfare and School Medical Officers.

Dr. J. A. Fraser proposed the toast of "Our Guests." In reply, Alderman H. J. Bambridge, Chairman of the Public Health and Welfare Committee of the West Riding C.C., said that he had never subscribed to criticisms sometimes made of the Ministry of Health because the fault often lay with the people on the spot—to members of committees, lay administrators and medical officers of health. If only they would get together, then they would get the co-operation of the Ministry of Health to secure better conditions throughout the whole country. His experience of his colleagues in the Public Health Service had always been particularly happy. Sir Harold Middlebrook, Chairman of the Health Committee at Harrogate, said that he had found the officials of his health department most helpful.

Prof. M. J. Stewart, the Dean of the School of Medicine of the Leeds University, added that Leeds University was indebted to successive Medical Officers of Health of Leeds (and particularly to Dr. J. Johnstone Jervis) for the help they had received. The Council of the University had been devoting much time to post-war considerations, and had prepared a huge scheme for the extension of the University.

Dr. A. L. Taylor proposed the health of the President. Dr. Benn, in reply, remarked that the Yorkshire Branch had a reputation for encouraging its younger members, and he felt that this was partly due to the policy pursued by the more senior members of the Branch. He thanked the Hon. Secretary for all the work he had done, and for the help he had given him personally. He hoped that his successor would have a happy year of office.

The minutes of the meeting held on May 26th were approved. The congratulations of the members of the Yorkshire Branch were sent to Dr. Helen Standing, who had been awarded the M.B.E. for service in connection with Civil Defence. Officers were elected for the year 1944-45 (see p. 90).

MIDLAND BRANCH

President: Dr. A. B. Griffin (M.O.H., Worcester City).
Hon. Secretary: Dr. H. Paul (M.O.H., Smethwick C.B.).
The annual meeting was held at Worcester on July 27th. There were present the President and 27 members.

Officers of the Branch were elected for the year 1944-45 (see p. 90). Before the meeting the members and guests were conducted round the Ministry of Pensions hospital by Dr. S. J. Scurlock, the Medical Superintendent, and members of his staff, who demonstrated the functions of a rehabilitation unit. Tea was kindly provided and the thanks of the meeting were accorded to Dr. Scurlock and the Matron. A vote of thanks was also accorded to the President.

EASTERN BRANCH

President: Dr. D. Wainwright (M.O.H., Great Yarmouth C.B.).
Hon. Secretary: Dr. J. W. Hunter (M.O.H., Ipswich C.B.).

A meeting of the Eastern Branch of the Society was held at Great Yarmouth on July 29th. The President was in the Chair, and 21 members and guests were present. The minutes of the last meeting were read, confirmed and signed by the Chairman.

Dr. Banks, the Regional M.O. of the Ministry of Health, gave a short survey of the public health problems in the eastern region, and mentioned some recent methods in the control of typhus. Dr. Dubash, E.M.S. Pathologist attached to the Area Laboratory, Borough General Hospital, Ipswich, gave a short talk on the use of penicillin. A useful discussion ensued, and thanks to both speakers was proposed by Dr. Irene B. Green.

Dr. V. Walker, M.O.H., Lowestoft, was unanimously nominated for Presidency of the Branch for the Session 1944-45. Other nominations were as follows: *Hon. Secretary and Representative on the Council*, Dr. J. W. Hunter, M.O.H. and School M.O., Ipswich C.B.; *Hon. Treasurer*, Dr. D. E. P. Jolly, Senior Assistant M.O.H., Ipswich C.B.; *Representative on the Tuberculosis Group Committee*, Dr. W. B. Christopherson, Tuberculosis Officer, Norfolk C.C.

BRANCH AND GROUP ELECTIONS: SESSION 1944-45

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Vice-Presidents	Sir Allen Daley. Dr. Wynne Borland.
Hon. Treasurer	Dr. J. Fenton.
Hon. Secretary	Dr. J. A. Scott.
Representatives on Council	Dr. W. Stott. Dr. J. A. Struthers. Dr. J. A. Scott.
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Representative on Council	Dr. G. V. T. McMichael.
WELSH BRANCH	
President	Dr. H. R. Tighe.
Hon. Secretary and Treasurer and Representative on Council	Dr. J. McKim Thomas.
EAST ANGLIAN BRANCH	
President	Dr. K. Walker.
Hon. Treasurer	Dr. D. E. P. Jolly.
Hon. Secretary and Representative on Council	Dr. J. W. Hunter.
EAST MIDLAND BRANCH	
President	Dr. M. L. Bery.
Vice-President	Dr. W. G. Booth.
Hon. Secretary and Treasurer and Representative on Council	Dr. J. A. Stirling.
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Hon. Treasurer	Dr. K. E. Tapper.
Hon. Secretary	Dr. C. E. Herington.
Representatives on Council	Dr. M. Manson. Dr. Malcolm Barker. Dr. C. E. Herington.
NORTHERN BRANCH	
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Vice-President	Dr. Ethel Browell.
Hon. Secretary and Treasurer	Dr. Geo. Hurrell.
Representative on Council	Dr. A. S. Hebblethwaite.

MIDLAND BRANCH	
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Vice-Presidents	Dr. G. A. Auden. Dr. A. J. E. Griffin. Dr. R. H. H. Jolly. Dr. A. Massey. Dr. H. P. Newholme. Dr. H. Gibbons Ward. Dr. H. Paul. Dr. A. Massey. Dr. H. Paul.
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Hon. Secretary	
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EDITORIAL

International Health Studies*

The public health activities of the International Health Division of the Rockefeller Foundation involve in particular observation of disease as it occurs in the field. To-day, much of this work is related to the war, and therefore more restricted than usual to short-term projects: the report on the public health work for 1943 deals especially with typhus fever, influenza, malaria, and yellow fever.

The Foundation continued its co-operation in the control of yellow fever in various parts of the world, provided prodigious quantities of vaccine, and carried out field and laboratory work in Colombia, Brazil and Africa. It had been feared that smouldering infections might be fanned into epidemics when men were sent into the endemic areas of Africa and South America, or that the return of members of the armed Forces while in the incubation period might introduce the virus. These fears now being thought groundless, the more serious risk of introducing the disease is considered to be air travel, more particularly during war-time, when planes are likely to avoid established routes and schedules and therefore not subject to the usual quarantine and disinsection measures. Although yellow fever now is geographically not so near the United States as it was early in the century, being absent from such areas as Mexico and the West Indies, air transport enables a person to arrive in the U.S.A. when still in the incubation period; and an infected mosquito can travel with him. From recent work on the vaccine, it appears to be established that if kept at ice-box temperature it remains effective for two years, that it is safe for anyone to enter an infected area seven to ten days after vaccination, and that of a mixed group of vaccinated and unvaccinated persons working together only the unvaccinated contract yellow fever. The Colombian investigation suggests that there is no mammalian reservoir of the yellow fever virus.

Attention on malaria was largely devoted to testing new drugs for their prophylactic and therapeutic activities, though much work was also done on the distribution of the various types of mosquito. An index of the complexity of to-day's problem is that when Ross made his discovery of the mosquito link in malarial transmission only about a hundred species were known; to-day 1,500 species are recognised, of which 200 are anophelines and potential malarial vectors.

In the case of influenza, most work was on field experiments with vaccines. Not all preparations gave as good results as in one series in which vaccination was followed by a reduction of 76.7% in case incidence.

* Annual Report of the International Health Division of the Rockefeller Foundation. 1943. (New York.)

The work on vaccines against typhus fever was dropped temporarily, as it was felt that little progress could be made until more information was available as to the chemical and biological properties of the Rickettsia. Much research was done on substances which, when applied to clothes, would control lice; some 750 powders were tested, the most successful being D.D.T., of which a 10% powder is effective for at least a month. A similar research on preparations suitable for application to the scalp also proved successful. A direct result of the employment of these discoveries was that in one village where typhus was epidemic and 64% of the population had body lice, the epidemic was brought to a standstill by treatment, and in the second week hardly a single person harboured lice; but one month after the start of treatment 7% of the population were again infested.

The Foundation has conducted nutritional surveys on a large scale, and interest attaches to the comparison of two carried out in a town in this country which showed that there, at least, the state of nutritional health had remained essentially unchanged since the beginning of 1942. Ill-health due to improper feeding was found to be common, especially in large families with low food expenditure and overcrowding, the most serious of the shortcomings of the diet being in iron, vitamin C, proteins, vitamins A and D, and possibly calcium and fats. A four-year study suggests that the trend of syphilis among pregnant women offers a fair guide to the trend of the disease in a community. The results of another study supported the suggestion that there was a practical use for a heat-killed tubercle bacillus vaccine in those subjected to unusual risks of infection, as medical students, pupil nurses, hospital attendants and household contacts. The most plausible hypothesis as to the source and nature of the icterogenic agent in a group of men inoculated with yellow fever vaccine was that it had been introduced into the vaccine in human blood serum secured from supposedly normal donors, the agent probably being a filterable virus.

In addition to their programme of disease control, the International Health Division assists certain State and local health services as well as aiding public health education—in all, a magnificent return from a beneficent bequest.

APPLICATION FOR POSTS IN WAR-TIME

Whole-time public health medical officers who need, under Circulars 2818 and 2881, the Minister's permission to apply for other posts are required by the terms of the circulars and of the notifications sent to them individually by the Minister's (Principal) Regional Medical Officers to obtain the permission before they make application to the appointing authority. If the permission is not obtained before making application the Minister will not approve their appointment. A number of candidates have recently found that they have been disappointed because the Minister has felt obliged to insist upon strict adherence to this rule.

THE SCHOOL MEDICAL SERVICE

By J. CHUTER EDE, M.P.,

Parliamentary Secretary to the Ministry of Education

Sir George Newman, to whose foresight, initiative and organising ability the School Medical Service owes its establishment and subsequent development, summed up its achievements in one of his late reports in these words:—

"To sum up: the average leaver of to-day is taller, heavier and in better nutritive condition than was his predecessor 21 years ago. Any handicap due to defective vision or hearing has generally been reduced or abolished so far as medical skill can accomplish this. He is very seldom the victim of severe crippling deformity. He has learnt habits of cleanliness, and has been saved from the prolonged discomfort and loss of school attendance due to neglected inflammatory conditions of eyes, ears and skin. He has had some dental treatment and thereby has saved some permanent teeth which would otherwise have been lost. In all these ways he leaves school substantially better equipped to fulfil the work and enjoy the pleasures of life."

This, though written more than ten years ago, is equally applicable to-day. In spite of the hardships and restrictions imposed by total war, in spite of the inevitable shortage of medical, dental and nursing personnel available for the School Medical Service, the general health and growth of school children has been maintained at pre-war levels. No praise can be too high for the school doctors, dentists and nurses to whose work this result is due.

Future Plans

What of the future? As part of the general scheme for improving the educational system of the country, the Government are concerned to see that the best possible provision is made for the health and welfare of the children and also for the care of those who are handicapped by physical or mental disabilities.

It is proposed in the first place to extend the powers and duties of Local Education Authorities in regard to the medical inspection and treatment of school children. Under the new Act (Section 48), Authorities will be under an obligation not only to provide for medical inspection at appropriate intervals of all the children attending primary and secondary schools and County Colleges maintained by them, but also to see that any children will be enabled to obtain free of all cost to the parents any form of medical or surgical treatment, except domiciliary treatment, that he or she may need. Medical inspection will be compulsory, but parents will of course retain the right to decide whether or not their children should receive treatment.

The Minister of Health has recently set out in a White Paper the outline of a comprehensive health service which is to be made available for everyone who may wish to use it. Fears have been expressed in some quarters that there is some inconsistency, or at least danger of overlap, between the proposals in the Education Act and those in the White Paper. It is of course impossible until the scheme for a national health service takes legislative form to define precisely where Local Education Authorities' duties will end and where those of the new health authorities will begin, but the Education Act is so framed as to give the Minister power to control the development of the School Medical Service in such a way as to ensure that, while Local Education Authorities do all that is necessary to see that facilities for all forms of treatment are available for school children, they do nothing which conflicts with the wider scheme for the health service as and when it comes into operation. The two Ministers work in close consultation on these matters, and have every intention of ensuring that all that is done by L.E.A.s will be consistent with future developments in the health service.

Education Act and School Medical Service

Turning now to the more immediate effects of the Education Act on the School Medical Service, I should like first to touch

* Address given to the School Medical Service group of the Society on November 3rd, 1944.

upon certain administrative changes which are consequent on the first schedule of the Act. Section 6 and Part III of this schedule provide for the setting up of a new machinery for the local administration of the public system of education in county areas. While the education service in county areas will be administered under the general control and supervision of the Local Education Authority, the Authority's functions as regards primary and secondary education may be delegated to divisional executives by schemes of divisional administration. Paragraph 41 of the Ministry's Circular No. 5 on schemes for divisional administration gives an outline of the position of the staff of the School Medical Service under the new arrangements. This reads as follows:—

"The County School Medical Officer will be appointed by the Local Education Authority and the officer holding this appointment should, as is now the case, also be the Medical Officer of Health employed by the County Council as Public Health Authority. As the School Medical Officer will be responsible to the Authority for all matters pertaining to the health and physical well-being of the children and young persons attending educational institutions maintained by the Authority, it is essential that the medical, dental and nursing staff employed throughout the county should be under his general control. At the same time the divisional executive, in the exercise of its delegated powers, will be concerned in these matters within its own area. It follows from this that both the Local Education Authority and the divisional executive should be associated in the appointment of any Assistant County Medical Officers, school dentists and nurses who may be appointed in services in the area of the executive. It will no doubt be considered desirable that the Medical Officers of Health and other medical, dental and nursing staff employed by the county districts should be appointed to the county staff for School Medical Service purposes."

I can't, of course, say what precise arrangements L.E.A.s may make in delegating functions to divisional executives, though I should imagine that the usual plan would be to appoint the existing School Medical Officer of the Part III Authority on to the staff of the county. In such a case the medical officer would continue to function broadly in his present area, and the only change in his position would be that he would become an Assistant County Medical Officer so far as the School Medical Service is concerned. Section 98 of the Act provides safeguards against any pecuniary loss that might result.

Medical Inspection

Considering now in some detail the functions of the School Medical Service, I should like to say something about the system of medical inspection. Though this is the cornerstone of the whole structure of the School Medical Service, it has, I believe, been subject to a certain amount of criticism: that it is not frequent enough in the course of school life; that the doctor's time is wasted by having to examine a large number of children who are physically perfectly normal; that it does not secure sufficient concentration of medical supervision over children really needing it. These criticisms may be well justified, but as yet, so far as I know, no constructive scheme to replace the present system has been put forward by the critics. I do not, however, dismiss these criticisms as non-valid, and in the Regulations with regard to medical inspection which are to be made under Clause 69 of the Act the Ministry, while laying down minimum requirements, will endeavour to make them sufficiently elastic to allow experimentation with various systems in different areas.

The criticism which to me, as a layman, seems the most serious is that which argues that more concentration is needed on individual children. To bring this about and at the same time to maintain general supervision over the health of the school population as a whole—a school population soon to be made larger by the inclusion of pupils in County Colleges—will necessitate an increase in the number of School Medical Officers. A considerable increase will be necessary to meet the new obligations under the Act, but at the same time we must keep in view the enormous demands which will be made on our depleted medical man-power by the future development of the national health service. Medical men will not be available for the intensive School Medical Service we should like

to see, or to allow for visits of the School Medical Officer to the schools as frequently as is desirable.

We shall have to practise economy in our medical man-power in the future as we have had to during the war years, but it seems to me that we may go a long way towards attaining our object by intensifying the activities of the School Nursing Service. Under a few Authorities before the war I believe a daily visit by a school nurse to each school was the rule. I should like to see this made the usual practice. The work of the school nurse in maintaining cleanliness of children, in keeping constant touch with children under medical attention and in picking out and referring to the doctor those children who appear to be in need of medical attention, seems to me to be of fundamental importance in our whole system of the medical care of school children. While I have emphasised the importance of a daily visit to the schools, I attach at least equal importance to securing contact between the school medical service and the homes. This can only be done if the nurse who looks after the children in the schools can also go to the homes from which they come and can thus get to know the home conditions and to win the confidence of the parents. In many areas this is already the practice and the school nurse is also the health visitor. I hope that as the services become more generally and closely combined the practice will become universal, and I propose to take such steps as I can to facilitate this process.

Medical Treatment

As regards medical treatment the duties of Local Education Authorities under the new Act are considerably increased. Formerly, to provide certain forms of treatment was a statutory duty, while to provide other forms was merely a power. Under the new Act it is the duty of every Local Education Authority to make arrangements for securing the provision of free medical treatment of all forms, with the exception of domiciliary treatment, for pupils at any school maintained by them. The words defining this duty are somewhat vague, intentionally so for this reason—that the arrangements for medical treatment made by Local Education Authorities will have to be integrated with and eventually absorbed into the future national health service. Arrangements for securing the provision of free medical treatment may include the actual provision of medical treatment as is done now, assisting pupils to obtain treatment—for example, by making arrangements with hospitals or special clinics and by "following up," encouraging pupils to obtain treatment through whatever agencies are available. Local Education Authorities will continue to provide treatment that they are now giving, and in fact many Authorities will have to extend their arrangements to cover other forms of treatment for which there are no existing facilities. Education Authorities will not be absolved from their duties in this respect because at some future date all forms of medical treatment will be available under the national health service. Arrangements made by L.E.A.s will indeed form a nucleus for the clinic services of the national health service, and it seems probable that eventually many of them will be taken over as they stand. Whatever form the future medical treatment services take, it will remain a duty of L.E.A.s to carry out inspection of pupils and to take all possible steps to secure that any medical treatment which is required is obtained.

Work of School Medical Officers

Consideration of the future shape of medical services has, I believe, caused a certain amount of concern among School Medical Officers. They foresee that the possible separation of inspection and treatment services may be prejudicial to the work of the School Medical Service and to their clinical interests. It must be remembered, however, that even now much of the treatment given under the School Medical Service is of a specialist nature administered by consultants and not by the medical officers doing the routine work in the schools. One of the most important duties of the latter is to supervise children who have been referred to and treated by specialists, and that duty will remain whether the child has been treated at clinics conducted by the L.E.A. or by the Authority responsible for the national health service. It is true that as and when the new national medical service develops the

responsibilities of L.E.A.s for the actual provision of medical treatment will be reduced, though there will still be certain forms of treatment—e.g., treatment of speech defects—for which it will probably be found easier for the Education Authorities than the Health Authorities to provide.

The School Medical Officers of the future will, as at present, and even to an increasing extent, be engaged on other public health work. There will be, as there is now, a certain number of School Medical Officers whose duty is largely administrative, but I should like to see School Medical Officers doing clinical work in a wider sphere than circumstances allow them at present. If they can take part in the work under the national health service either in group training, in hospitals or even in domiciliary treatment, I feel sure that this wider scope of interest would be beneficial to them and to the School Medical Service.

School Dental Service

Let us turn now to consider the School Dental Service. Most defects and diseases affect only a minority of school children, but with dental defects we see a very different state of affairs. There are probably few areas in this country where, at the age of 12 years, more than about 2% of the children have a naturally sound dentition, and there is at present no good reason to anticipate that that figure will be substantially increased in the near future. The task of providing treatment for this most widespread of all defects is formidable, and the staff required for it will clearly outnumber that needed for the treatment of all other conditions combined. In 1938 the total number of school dentists, expressed in terms of full-time service, was greater than the number of school medical and assistant school medical officers, expressed on the same basis. It is common knowledge that the number of dentists then employed was only a fraction of what is required for a comprehensive service, and the problem of inducing more young men and women to enter the profession of dentistry and so make it possible to obtain a substantially increased number of school dentists is now engaging the attention of the Inter-departmental Committee presided over by Lord Teviot. Until that Committee has reported and its recommendations have been considered, it is not possible to indicate precisely the lines on which the School Dental Service will develop.

Much will depend on the conditions of service—not merely the financial rewards or the prospect of advancement, though both of these are important, but even more on the opportunities which the service offers of real responsibility. Quite clearly the dental service cannot be divorced from the medical service, but within the general framework of the latter the dental officers can and should be made to feel that the success or otherwise of the dental scheme is something for which they are responsible. In a number of areas that state of affairs exists at present. I wish I were able to say that it was universal.

The success of any dental scheme depends on securing the confidence of the parents and the children. This can be done only by the combined efforts of the school dental and medical staff and of the teachers, and their efforts are most likely to succeed where the Local Education Authority themselves show sympathy and interest. Where all these influences are present a very high acceptance rate for treatment can be and is achieved. It should be your aim to enlist the co-operation of the teachers—to whose help in many areas I should like to pay a tribute—and of the members of your Education Committees.

Before leaving Section 48 of the Education Act I should like to point out especially one duty imposed by that section. It is that the arrangements for medical inspection and treatment made by Local Education Authorities are to cover pupils in County Colleges—that is young people between the age of leaving school and 18. One of the most important effects of this change in the law will be that it will for the first time bring under regular and careful medical inspection boys and girls who have left school and entered employment. This age group, 14 or 15 to 18, is one of the most susceptible to certain illnesses, and the change from the relatively short school day to the longer hours and greater strain of working life enhances that susceptibility. It is of vital importance for the future health of the nation, and is of importance, too, to industry, that these young people should be medically

examined and encouraged to obtain any treatment they may need throughout these years. The recent advances in diagnosis, such as the use of mass radiography, which is already being tried out on an experimental basis in certain fields, will be available for these age groups.

This extension of the service will greatly facilitate the co-operation which already exists between the school medical staff and the agencies responsible for advising young people as to choice of employment and for their physical welfare in industry. It will, I hope, enable us to deal effectively with dental disease in those years of early adolescence when dental caries is specially rampant. It has in the past been a matter for sincere regret that much school dental work was ineffective because of its cessation for most boys and girls at 14 years of age. For this ineffectiveness blame was often laid on the gap which separated school-leaving age and eligibility for dental benefit but the relatively low demand for dental benefit treatment gives little ground for hoping that closure of the gap would, of itself, effect much improvement. For improvement we must look to the influences associated with attendance at County Colleges. We have returned, in fact, to our earlier point—the influence of the teachers. If that influence can be enlisted in enthusiastic support of the dental scheme we shall have advanced a long way towards our aim of ensuring that the gateway to the body shall be healthy. It is not too much to hope that this measure will have an immediate and lasting effect in preventing the onset of disease among the young and producing a fitter generation.

The Handicapped Child

I come now to Section 33 of the Education Act, which defines the duties of Local Education Authorities towards children who are temporarily or permanently disabled from obtaining benefit from the ordinary education given in school. Such children are the blind and partially sighted, the deaf and partially deaf, the delicate, the physically handicapped, the educationally subnormal, the epileptic, the maladjusted and the child suffering from speech defects. Under the Act Authorities will have the duty of ascertaining all children in their areas who suffer from such disabilities and providing suitable education according to their special needs. This duty is a comprehensive one, and includes the provision of education in special schools for all those who need something more than can be given in the ordinary schools, though it rightly includes also the duty of providing special educational treatment within the ordinary schools if those children's needs can be satisfactorily met in this way.

These children are, fortunately, exceptional, and the numbers of them falling into any particular category, such as the blind or the deaf or the epileptic, are often too small to permit of the establishment of a special school for those living in the area of any single Authority. For these children, therefore, boarding schools which can draw from wider areas are built, and it is hoped there will be substantial development in the provision of residential special schools both by Local Education Authorities and by voluntary bodies who have done so much in the past for the afflicted child. The Act gives power to the Minister to make grants to voluntary bodies for such purposes.

There are other categories of children for whom day special school provision can be made, and the provision of such schools in larger numbers than now exist is a primary need. There are still other handicapped children who can fit in quite well in the ordinary schools with suitable adaptations of the curriculum and modifications in the school regime.

Broadly speaking, then, special educational treatment will be given either in special schools or in the ordinary schools, the main criterion being whether or not the child can be satisfactorily educated in the ordinary school with such adjustments in the educational curriculum as may be necessary. If he can then he should go to the ordinary school, provided of course his presence is not detrimental to the interests of the others.

Ascertainment and Treatment

Now the duty of ascertaining those children who need special educational treatment, of advising which children

need education in special schools and which can remain in ordinary schools, and of maintaining close supervision over children receiving special educational treatment, particularly over those in the ordinary schools, will fall largely on the School Medical Officer, working in close collaboration with his colleagues in the educational field. The first step in the ascertaining of these children will usually be made by the teachers. It is they who will become first aware of a child's abnormal behaviour or lack of response to ordinary methods of education, and it will be their duty to report such children to the School Medical Officer. Full investigation by the School Medical Officer must follow, in collaboration with the teachers and, wherever necessary, with the educational psychologist. If a defect of seeing or hearing is involved examination and a report by a medical consultant may be necessary, and to advise on the nature of the special educational treatment required it may be desirable to elicit the help of teachers of the blind or deaf.

Section 34 requires the medical officer who examines a child to issue a certificate if the parent or the Local Education Authority ask for it, and in all cases where the Authority consider it necessary for the purpose of securing attendance of a child at a special school. This does not mean that any large proportion of the children must be certified. We want to get away from certification, and, indeed, we hope to do so by securing the co-operation of parents in the special educational treatment which is offered to their children. On the other hand, removal of a child to a special school, and particularly to a boarding school, against the parents' wishes does involve an infringement of the liberty of the subject, and this is why Parliament enacted this safeguard of certification in particular cases. Further, under Section 69, the Minister has power to require the medical examinations for this purpose to be conducted by doctors possessing special qualifications or experience.

The children receiving special educational treatment in the ordinary school will consist for the most part of educationally subnormal, but there will be a small miscellaneous group which may include partially sighted, partially deaf, physically handicapped and delicate children. These must be examined periodically by the School Medical Officer, their medical condition reassessed and in conjunction with the teachers and the educational psychologist their educational progress reviewed with a view to determining whether any adjustments in their educational treatment are necessary. A similar review must be made of children attending special schools maintained by the Authority. Naturally, the School Medical Officer cannot maintain so close a touch with children, mainly the blind or deaf, sent to residential schools conducted by voluntary bodies. He should, however, by means of reports from the residential school, make himself aware of their medical and educational progress, and should, if it seems necessary, make arrangements for their examination by specialists during the school holidays. All this work implies an even closer collaboration in the future between the School Medical Officer and the teaching staff, a collaboration which has been so fruitful in the past.

Buildings, Food, Exercise

So far I have confined myself in the main to the medical care of the children. School Medical Officers have, of course, many other functions, but there is one in particular on which I should like to say a few words. In the new era which is opening in the educational world it is our intention to secure a much higher standard in school buildings than has, I am afraid, been general in the past. The Ministry is, as you may know, going to issue regulations to which all buildings in schools maintained by Authorities will have to conform. I hope school medical officers will take a personal interest in the planning of schools, and in particular in those aspects of it which affect the health and well-being of the children. There is much room for experimentation and new ideas. The doctors who are daily in the schools must have a fund of experience which could well be of service to the Authorities and their architects. School Medical Officers, too, can do much to ensure that proper hygienic conditions are maintained.

Before closing I should like to touch on some of those services which are ancillary to the medical service and which contribute in great measure to what may be described in a "catch phrase" as the positive health policy of education. These are three, provision of meals and milk, physical training and health education.

As some of you may have noticed, it fell to Mr. Butler's lot to speak in the House of Commons on the subject of school meals and milk in relation to family allowances. I will not repeat what was said then, but I may perhaps emphasise one point—the importance of securing the optimum nutrition of children. We have set a high standard for school meals and we mean to see that it is attained. Much can be done to help. I am not going to suggest that all school medical officers should make themselves experts in dietetics, though many of you may be keenly interested in the scientific aspects of nutrition. I hope, however, that whether you are expert or not you will regard the school meals and milk service as one in which you can and should play your part by encouraging all those concerned to aim high and by being ready to offer advice and assistance in solving the problems which this immense social service presents.

There is, or should be, a close relationship between physical training and the School Medical Service. Physical training should, if wisely administered and intelligently taught, make a valuable contribution towards the health, happiness and development of school children. When the School Medical Service was established the teaching of physical training in the schools was very wisely included among the chief agencies designed to achieve the aims and purposes of the Act. The work of these agencies ought to be carefully co-ordinated and directed in the common effort to solve the problem of education in relation to health. The problem, surely, is to help children while at school to acquire certain theoretical knowledge about the ways and means of keeping healthy, and to practise habits of living which will tend to maintain maximum physical efficiency without, however, causing the children to become unduly introspective or health-minded.

Physical training and the School Medical Service have the same object in view—the acquisition and maintenance of positive health. It has been truly said that "it would be a very narrow view to look upon the School Medical Service as an enterprise designed to catch and to cure the impaired child. The school is not a dispensary for the sick; it is the one and only place where the population in childhood can be collected, examined and trained and thus it is the only universal school of health for the nation."

I am enormously impressed with the importance of health education in a long-term policy of raising the standards in health, physique and cleanliness of the school population of this country. Health education—I prefer to call it social education—embraces not only direct teaching in health matters given by doctors, dentists and nurses to individual parents and children, or by teachers through habit training in the nursery and infant schools and the more formal teaching of older children, but the education in such subjects as nature study, biology, domestic science and the nature and evolution of the social services, all of which should form part of the knowledge of every boy or girl leaving school. You may consider that this matter is outside your sphere, that it is primarily a matter for the teaching profession, and that it is not one with which you can appropriately interfere. I agree that health education should permeate the whole curriculum of the school, and therefore it must ultimately be a matter for the teaching profession. But you could do much if you will to inspire and direct into right channels such teaching and to try and secure that the conditions in the schools themselves are a practical example of healthy living.

The Central Council of Physical Recreation, 58, Victoria Street, London, S.W.1, have recently produced a 23-page booklet entitled "Facilities for Physical Recreation: Some Suggestions for Local Authorities." The price is 1s. 6d. post free, and the booklet contains advice on the provision of playgrounds, sports centres, equipment for various physical activities, and adequate leadership.

WHAT IS A HEALTH CENTRE?

By INNES H. PEARSE, M.D.

The watchword of medicine is no longer "cure," but "prevention"—a step forward so largely due to the hygienist. Having brilliantly applied this principle in a mass attack upon the environment, what now? Is his next step to carry prevention into the clinical realm, there to apply it to the patient? Already he has been roped into responsibility for the minor conditions for which the clinician has evinced but little taste and found no time (*e.g.*, early tuberculosis, rheumatism, venereal disease, and the work of the school treatment centres). Armed with the injection needle, he has become "doctor of the immunisation clinics," though he is no clinician, and though no individual can be treated on a statistical basis without reference to his personal background. Knowledge of diathesis, or the disposition to disease which underlies individual idiosyncrasy, is part of the clinician's art. The hygienist is little content with the role of mere administrator of hospitals, or to become the authority responsible for the care of minor disorders, into which he was rapidly drifting in the years before the war.

What is Health?

To prevent, you must first anticipate and fear disaster. Fears multiplied cannot eventually lead to health, the quality of which is blithe and intrepid. The hygienist knows this. Not only has he already a score of diseases against which he must immunise if he puts his faith in prevention, but he can visualise a further score in the near future. When the span of life is one long succession of preventions, shall we have achieved health? More important still, it is the hygienist who is in a position to discover that the patient successfully immunised is not identical with the naturally insusceptible individual. In the midst of an epidemic there are always those who, though never immunised, do not take the disease. In these natural "insusceptibles" there are no immune bodies to be found. Whence, then, the health of the naturally insusceptible individual? Here, presumably, is a natural quality of the living organism which enables it to live with, and perhaps by, its environment, rather than in antagonism to it—*i.e.*, in fighting against it. How does this positive quality of health arise, and out of what circumstances is it developed? Here is a direct challenge to grapple, not with sickness and its prevention, but with health as a positive quality.

The foregoing is a specific technical instance. More general considerations have also led to a sense of the necessity of search for some positive quality of health. The establishment of the "Fitness Council" was one indication that even before the war the public were aware that health does not necessarily flourish in the absence of disease. To some the fitness movement was perhaps no more than an emergency measure to counter the threat of war. To others it was a recognition that health should be a natural quality of the individual, to be sought for in the young rather than in the established adult population. That the nature of "fitness" was never clearly defined, and that the fitness movement proved a still-birth, are beside the point. In its conception the promise of future adventure was implicit. The absence of sickness does not imply or ensure that vitality which is of health.

There is a universal lack of clear thinking as to the nature of health. Both in official and in common parlance the word "health" is used interchangeably with "sickness"—*e.g.*, National Health Insurance, a National Health Service, both of which are concerned with provision for the sickness of the nation. It is a commonplace to meet with statements such as the following: "We have to announce the establishment of a Chair of Child Health, the aim of which is to deal comprehensively with all the diseases of children."

In agriculture and in the world of animal breeding the distinction between the pursuit of health and the prevention of disease is more fully understood. There are two well-defined schools of thought: one, that of the pathologist who proceeds by spraying, disinfection, and inoculation to destroy or prevent disease; the other, that of the cultivator*, who

* *The Living Soil.* By E. B. Balfour. (Faber & Faber, 1943.)

claims that through the maintenance of mutual relationships between soil, plant and animal that share the environment a self-sustained oecological balance is established in which health—that is to say vigour, continued fertility and freedom from disease—result spontaneously for all concerned. In this conception the cultivator sees the organism and the environment as functionally inseparable, the health of each depending upon "mutual synthesis of organism and environment."*

In the English language the original meaning of "health" was, not the absence of disease, but "wholeness." This wholeness did not merely imply "sound of mind as well as limb," but included the nature of the individual's relationship to his surroundings. The old Prayer Book phrase "there is no health in us" bears testimony to this. It implies a disordered attitude (manifest through the feelings and actions) to a greater whole—which in modern terms may be translated as "environment" in its widest connotation.

An understanding of health will not come from study of the sick in reaction to their environment. The laws of pathology must be—as they have been since the days of Hippocrates—sought among the sick and the suffering in the hospital and the clinic; but the laws of health must be sought in the living organism in its natural habitat where it can be seen in action in relationship to its environment. Health is clearly outside the knowledge and scope of the clinician informed by pathology and rightly devoted to correction of disorder. Health must be sought elsewhere; and this brings us to our subject—what is a health centre? A health centre is not any aggregation of clinics staffed with a full company of correctors. It is a locus in society in which the social soil, or intimate environment, is turned and cultivated so that the young "family," newly planting itself in the social soil, may develop and, as it matures, find the sustenance necessary for expression of its full potentialities.

The Pioneer Health Centre

In 1935 the Pioneer Health Centre was opened in Peckham, London, S.E.15. This district was chosen as one in which there were living families of a good and mixed artisan type, who suffered the extremes neither of poverty nor of riches, were subject to the minimum of unemployment, and included no social problem group. The large modern building was designed and equipped as a club to serve the leisure needs of all families living within walking distance. To the more casual visitor it was perhaps somewhat suspect; the earnest could not discern in it the essential hallmarks of "cultural" intent, while to the man in the street it was new and unfamiliar, and one of the only two conditions of membership—periodic health overhaul—roused suspicion. Naturally enough, in view of the universal confusion in the words "health" and "medical," he confused it with the compulsory medical overhaul he had experienced—at work, or in the Services. Into that noose, as he later confessed, he was chary of putting himself and his family. But other influences were at work in the family. The small boy of eight, or maybe girl of eleven, would hear from school friends of a big swimming bath and a gym. they used daily in "their club"; of skates, bicycles, paints, games, puzzles, books, after their swim—and no teachers or classes "you had to go to." The attraction was magnetic for the child. But he could not join unless "his family" belonged—both mother and father. No parent likes to deny its child, so usually the family came to see for themselves.

The large modern building was unlike anything they had seen before—large, low, quiet, cork-tiled open spaces broken only by a series of supporting pillars, the outside hung with glass windows that fold back in the sunshine. In the centre of the building sparkled in the sun the blue-green water of a full-size swimming bath, visible from the main floor space through a continuous encircling band of plate glass window. Along one side was a self-service cafeteria with tables overlooking the bath; along the other a large open space for meetings, dancing and social gatherings. A tour of inspection led

to other surprises. A large window in the main hall looked down on to a fully equipped gymnasium; and at the other end another large window showed a theatre with stage, wings, orchestral well, and the auditorium marked out for badminton—another floor-space available for multiple purposes. From below came the voices and laughter of children: infants some crying, small three- and four-year olds, school children—all playing in the ground floor corridors and on the playground overlooked by the long open front windows of the first floor. On the top floor there were billiard tables and a games room, library, workroom, cutting-out tables, triple mirror for fitting, pressing iron, etc.—open and visible to those passing through the building. Then suddenly a check to the free circulation of the open floor-spaces—"Examination Department," and a closed door. Within the reception room there are men, women and children, some in family groups, and one or two individuals in scarlet dressing-gowns. The receptionist and a Sister seem to know each of them well. There are dressing-rooms, bath-rooms, a busy modern laboratory and consulting-rooms.

Membership

To belong to the "Club" cost 1s. a week per family (pre-war), and entitled all individuals of the family to the general use of the club premises, all children to free use of all equipment, and the adults and working individuals to use of the equipment on payment of a small sum for each activity, e.g., 3d. a swim, 6d. for use of fencing kit. All of course paid for the tea, coffee, beer and food to be had at the cafeteria, and for the fresh fruit and vegetables and milk from the Home Farm* used in the cafeteria, and on sale to member-families.

Apart from the two conditions of membership—weekly family subscription and periodic health overhaul for every individual of a member-family—there were no rules in the Centre. The building and its equipment was designed for self-service throughout. There were no teachers to tell the members what to do; no organisers concerned to see that they used the equipment; no professionals to set a standard of use; no entertainments put on to "hold" the membership. The equipment was to ask its own question of the members. What use would they make of it? We found that on joining not more than one individual in any family would show any particular interest in, or aptitude for, any special activity—the rest came with no zeal for adult education, no enthusiasm for sport or drama or music. But finding themselves in an environment where all sorts of activities were going on all round them, would they be drawn in? Would the free circulation throughout the building, and visibility of all action, act as a stimulus to action in the apathetic? Within four years, the heterogeneous society, largely apathetic on joining the Centre, was carrying on no fewer than 40 or 50† different activities, every one initiated by the members themselves. Here was room and opportunity for all grades of performance—the timid gaining courage to venture from watching the actions of those slightly less skilled than themselves—as well as those slightly more skilled. So, in place of the usual exclusive performance of experts, with spectatorship of the mass, the Centre produced a society of people all themselves to some degree "doers," each using as his standard—if standards there must be—what he can do to-day against what, in fact, he did yesterday, each his own individual standard.

Periodic Health Overhaul

The first obligation of membership was health overhaul. This was done by appointment, the examining staff being available five days a week from 2 to 10 p.m., Saturdays included. Overhaul entailed an individual appointment for each person in the family for the laboratory collection of specimens; a second appointment for personal overhaul by man or woman doctor according to sex (or age in the case of children). The overhaul was then concluded by a general appointment for the whole family to meet the man and woman doctor in "family consultation."

* Experimental dietetic farm at Bromley Common, Kent.

† *The Peckham Experiment*. Pearce and Crocker. (Allen & Unwin, 1943.) Appendix II.

Space will not allow here of a full description of the technique of examination and family consultation*; certain aspects of the family consultation must, however, be mentioned. The situation was an unusual one of "doctors" faced with a family none of whom had come complaining of anything, nor asking for any advice. To give advice in such circumstances would be an unwarranted intrusion as well as liable to arouse instinctive resentment and reaction. How, then, was the situation to develop?

The consultation began by the doctor who examined the youngest member of the family giving an account of what was found—in the laboratory and at the personal overhaul—and stating the significance of each finding so far as it is known: no more: merely the facts gathered translated into lay terms. When this was over, that infant or child went out, and so on until all the children had left. With the mother and father now alone the consultation at once began to go deeper, all four people present—parents and biologists—taking part in fuller discussion of the meaning of the findings for the family. This was no ordinary "medical." The man's earlier suspicions began to dissipate.

Next came the husband's turn, and he and his wife again heard what was found from the man biologist. Last, the findings in the wife were set out by the woman biologist. This objective approach to the facts lifted the subjects touched upon out of their accustomed setting. Often, matters never spoken of in the home because of their emotional content would be looked at and discussed perhaps for the first time temperately and without embarrassment. Long-standing and deep-seated differences of opinion and difficulties between the parents would resolve in the light of the new facts. The pair came closer together; there was a basis for readjustment—often hoped for but never hitherto found. But the consultation did not end here. If the man and wife were young and thus likely to have children, or more children, the significance of parenthood with especial reference to themselves and to their own growth and maturity was then dealt with, and some of the lines in which modern biological and endocrinological research are beginning to throw light on the subject were indicated. An informed and intelligent lay interest in the deep and primary concerns of living was awakened.

A health overhaul has been made—not a medical overhaul. Its object is to cultivate the ground, not primarily to correct; to find what is right, rather than what is wrong. The members of the family were not "patients," but people presumably in health. No one is familiar with such material, last of all the doctor trained in hospital and upon the sick. A new technique has to be evolved.

Only 10% Without Disorder

Was there, then, never anything wrong? In all too many individuals and of all ages, out of 1,206 families, comprising 3,911 individuals, only 10% were found to be without disorders detectable by ordinary clinical methods; this 10% without disorders represents an average of males and females. There were only 4% of females in whom nothing wrong was found.† The remaining 90% fell into two categories‡: (1) those with lack of ease and/or consciousness of disability; the diseased, § 21%; (2) those without symptoms, i.e., unaware of their disorders, the compensated, 69%.

Nothing was withheld from the family. What was wrong as well as what was right was stated as an objective finding without moral and without advice, unless asked for. The result of this objective approach held a surprise. The family, almost without exception, either at once, within a few days or within a month or two, took steps to get what was wrong put right, usually asking advice as to what was the best method

* See *Biologists in Search of Material* (Faber & Faber, 1938), Section II. Also *The Peckham Experiment*, Chapter V.

† *The Peckham Experiment*, Chapter VI, and frontispiece.

‡ See *Biologists in Search of Material* for a further discussion of these categories.

§ Of this first category, the diseased, less than half were in receipt of medical treatment at the time of first examination.

of securing satisfactory treatment. Two or three years' experience of working with families in this way were enough to demonstrate the good sense and capacity for rational action of the man-in-the-street. The Centre provided a means by which he could find out about the things that most intimately concerned him and his family, and enabled him to act for himself with the minimum of interruption in his work and without jeopardising his freedom. He was quick to make use of it.

The member-families never confused their Centre with a treatment centre or clinic, nor expected to receive treatment there. It was a health centre. Any disorders disclosed were an incidental finding in making an assessment of the functional capacity for living. So disclosure of disorder aroused neither fear nor resentment, nor neurosis. Quite the contrary; it resulted in a heightened desire to be rid of what was wrong in order to get on with living. "It can be put right?—then I need not give up boxing." Or, "I can learn to swim?"—for the temptation to action was all round them, drawing each unconsciously into new interests, actions and social contacts—slight enough at first, then more and more numerous and with firmer intent. Now persons known before only by sight became acquaintances, acquaintances became friends, and some friends became intimates. Local society was integrating itself spontaneously through knowledge and action possible to all and shared by all.

This, of course, implies a continuity of contact. The recurring family overhauls and the many varied and continuously growing activities provided that in abundance. But, running through the whole Centre like water irrigating the surrounding soil from a flowing stream was a continuous flow of information (originating primarily from the Examination Department) which the members could tap at will. This was something which was helping them to understand themselves, their children and their needs. Here was a method of *topical education* of the family, operating just where its own life and interests were most intimately concerned.

Spreading the News

In the periodic overhaul, recurring every 12 to 18 months for each family, the tale of the first family consultation was picked up where it was dropped the year before. Not merely what had again been found on examination, but what the family had done in the interim now formed part of the recurring family consultation. How they have done what they have done had not escaped the doctors (biologist) and observers working on the social floor of the club. For example, the children, who on joining were often hysterical as a result of too little physical outlet, or too much home repression, or too little order and intent in the home, now moved with smooth ordered trackings throughout their leisure hours in the Centre. This could be illustrated graphically by the records of their chosen occupations and the increasing degree of purposive activity in the building; and such changes in their action pattern over a period of time were both of extreme interest and value to the parents in coming to understand their children.

So in the discussion of findings brought to light in the family consultation the interest and knowledge of the parents grow along with that of the observers. They, too, begin to look for themselves. Of course they talk about it. As they sit in the cafeteria at tea after the consultation the first thing they see is their own boy before them in the swimming bath. What more natural than to talk about him with acquaintances sitting next to them who also have a boy there. And perhaps this second family add in their own words their own experiences and what they have learnt about their children or themselves. So through natural contacts between those who share common interests, information gathered in the consulting room begins to be translated into the vernacular, and to infiltrate into the life of the members. Gossip, which in isolation is apt to be malignant, now becomes an advantageous "vector" rendering knowledge "endemic": a factor translating it into the idiom of the people. Slowly a tradition of knowledge and of competence grows into the society of associated families.

Contact between staff and members is of a much more constant nature than merely at the intervals of periodic health

* See *Biologists in Search of Material*. (Faber & Faber, 1938), pp. 19, 20.

overhaul. Once a common interest in the family and its concerns has been established at the first family consultation, it is only natural to have a word with the doctors or other members of the staff when meeting them on the floor of the Centre, or to slip upstairs and ask for a short appointment—to tell the news that the husband has got a new job; that at last they have found a better flat; that the boy has won a scholarship, and what school should they choose for him; that the girl has come out of the fever hospital, and could she come up to see that everything is all right now?

Pregnancy

This facility of contact has deep-seated consequences for the cultivation of health; for the more important the event the sooner is it brought to light. So when it concerns a possible pregnancy the announcement is commonly made before the fact of conception could be confirmed by simple examination in the consulting room. The long ante-natal period affords ample opportunity for repeated contacts. When conception is confirmed the wife revisits the examination department for repeat overhaul, and makes subsequent fortnightly visits to the laboratory and monthly visits to the biologist during the pregnancy. After her first ante-natal examination a *parental consultation* is held between husband and wife and man and woman biologist. Now that their natural interest is awakened they have an appetite for further information about what is happening to them in pregnancy.

In the Pioneer Health Centre the situation in pregnancy was unique for, had the conception occurred within Centre membership, both parents were likely to have had their disorders removed before conception occurred. What this means for the course of the coming pregnancy can be judged from the extent of disorders found on first examination of the families. Where only 4% of the females are without disorder it is clear that in ordinary course of events practically no pregnancies begin in optimum circumstances. This means that the first intimate environment of the new individual is rarely as good as modern science could help it to be. And not only that: if the presence of disorder, whether compensated or uncompensated, is reflected in the action-pattern of the individual, as we came to find was the case, it is clear that the home into which the child is to be born will not bear the stamp of health and full function. By "home" we imply here, not the four walls of the house or flat, but the zone of biological influence set up by the co-ordinated action of the parents and evidenced in the relationships they are able to establish with their environment, material and social. What happens before conception is of highest importance in seeking the health of the new individual wholly dependent upon the intimate environment provided for it by the parents, stage by stage, in its growth. The wanted child, in the "nest" well and truly built, is a primary requirement for the cultivation of health.

The Pioneer Health Centre provided the material and the circumstances out of which these could arise naturally. The newly married pair found an environment in which through action they could gain new experience and forge new social relationships with others in the same stage of maturity as themselves. They saw around them other young couples enjoying their babies, and enjoying their experience of pregnancy. For where disorder was removed before conception; where the wife's reserves were maintained at a high level during pregnancy; where her tone was sustained by an active life, physical* and social, throughout the ante-natal period; where labour was anticipated with the quiet confidence in natural achievement—the coming of the child became an enviable experience. Both husband and wife were rid of fear and foreboding; no wonder that others around them began to change their minds about having children. And when in these circumstances a baby did arrive, then because the first stages of its growth had been well grounded all went smoothly and naturally. In the Centre, with its nursery in the same building, the mother, when ready to do so, could pick up her social life again with her husband and, as the child grew, find outlets and companions for it as well as for herself. So we watched the deliberate repudiation of parenthood begin to

change into a positive desire for children. Unwelcome pregnancies began to be replaced by wanted conceptions.

Health is Infectious

Here were circumstances in which health was infectious; how infectious can be judged from the fact that this change in attitude of young married people occurred within four years of opening the Centre.* Without any change in financial status, without change in housing accommodation, the young married pair came to look out on life with new vision, new courage and new zest, which in turn changed the quality of their lives and the degree of their capacity for future action. This transmutation of values, truly astounding in the rapidity with which it began to occur, we attribute not to any one single circumstance but to the total impact of the Centre life upon the young family.

The removal of early disorder alone (as, for example, through proposed compulsory medical overhaul), without any field in which to engage the capacities newly released, is little more than useless as a means of reaching fuller health. The first tentative set up of the Peckham Experiment (1926-1929)† demonstrated this. Again, provision of social amenities alone (as in the proposed community centre movement) will not solve our problems. Without taking the preliminary steps to remove diagnosable disorders from those for whom the amenities are to be made available; without providing a continuous source of information from which each family can draw as its needs arise; without that faith in the inheritance of natural order in the human species by means of which—given the materials and the circumstances—an ordered pattern can emerge in its society, to provide amenities is to do little more than provide bread and circuses for a mob that must rely more and more upon "leaders" and "organisers." This is merely to palliate the symptoms of social and spiritual starvation. And again, the spread of information alone, through methods of publicity or personal canvas in season and out of season, in the absence of coincident chances for putting that information into action in the intimate circumstances of family life and of the home, is to engender boredom, reaction and relegation of family responsibility—in all but the few.

Health is "wholeness"; and wholeness is the first condition to be achieved in any attempt to "plan" society. To take the family as the basis for action is the first and easy step towards the achievement of "wholeness" and relatedness in society. By using the family as the unit, both sexes and individuals in every stage of maturity come naturally to mingle in common action. In linking the amenities of modern life with the modern developments in scientific knowledge, and placing both at the disposal of the family, one family spreads the desire for knowledge and for action to the next. By cultivating health, the stagnant products of ignorance and isolation are detoxicated, and amenities in the environment become a rational diet enriching the home. By refraining from the interference of "leading" or "organising" the family in this social setting is stirred to act for itself, each successive action leading to increasing confidence and capability to launch out. Thus each individual grows into a skilled and knowledgeable pilot of his own machine, living in growing awareness of the society of which he is an essential part.

Out of the Peckham experiment there have emerged biological principles and steps in a technique for the cultivation of health. It is now clear that the cultivation of health is something distinct and different from the practice of medicine, which is based upon the science of pathology and concerns the correction and/or prevention of disease. Who is going to lay claim to this new responsibility? A new breed of biologist, or the doctor? And if the doctor, what sort of doctor? The first temples of health were erected to the god Aesculapius—from which the sick were actually excluded. Has the Peckham Experiment, in achieving the first health centre, perchance disclosed the legitimate inheritance of that illustrious daughter of Aesculapius, Hygeia?

* See *The Peckham Experiment*, Chapters VIII and XIV.

† See *The Case for Action*, Pearce & Williamson (Faber & Faber, 1931).

TRACE ELEMENTS IN RELATION TO HEALTH

By C. FRASER BROCKINGTON, M.D., D.P.H.

County M.O.H. for Warwickshire

1. Workers in the field of animal and plant diseases have recently made a number of discoveries about the importance to health of minute amounts of various elements. This "trace" action appears to be quite distinct from the action of elements in salts as previously understood: not only is the amount very much smaller (e.g., approximately 1 gramme of calcium daily as compared with 0.1 mg. of cobalt), but the mode of action is apparently entirely different. The number of elements which have so far shown this faculty for trace action is not large, and with the exception of fluorine and iodine they are metals. The majority are beneficial—copper, iron, cobalt, iodine, boron, manganese, tungsten and zinc; molybdenum and selenium are harmful; fluorine appears to be both beneficial and harmful according to the size of the trace. There are probably others of the many elements in the periodic table which possess a similar action not yet elucidated¹, but the possibility has been excluded for a great many—e.g., arsenic, aluminium, silver, mercury. The table below sets out the salient facts of the trace elements and the diseases connected with them.

2. A feature of the trace elements is that they are in the main an essential part of animal or plant tissues. Some are concentrated in specific tissues—iodine in the thyroid gland, iron in the red corpuscles, zinc in the pancreas, and manganese in the liver. However, selenium and molybdenum do not play any part in the normal physiology of the body, and boron, which is essential to plant health, has no known action in animals; the question as to whether fluorine is essential or not remains in doubt.

3. The source of the trace elements is the soil, and they are taken up by plants or, in the case of fluorine and to some extent iodine, by water; hence it is the plant which first has to deal with variations in content produced from different "magmas," or resulting from peculiarities of erosion or glacial action or the vagaries of a selective action by prehistoric plant life, such as that of the laminaria of Lower Liassic times in extracting molybdenum from the sea. Plants, however, do not appear to be unduly susceptible. They are affected by certain elements (deficiency of zinc, boron, manganese, tungsten) which do not naturally affect man, no doubt in part due to the success of plant life in absorbing and distributing elements widely throughout nature. On the other hand, plants are not affected by certain elements to which animals are susceptible (man and animals—fluorine, iodine, iron; animals only—cobalt, selenium and molybdenum). In only one instance does an element (copper) naturally affect plants, animals, and man. This leads to the supposition that elements often appear to be operating in different ways in different species and that there may be little relation between the processes taking place in plants and animals and man, even when they are affected by a deficiency or excess of the same element. Selenium can be instanced: certain grasses, notably in South Dakota, take up large amounts (in p.p.m.) from the soil without harm to themselves, thus acting as selenium "accumulators": the selenised grain fed to poultry gives loss of viability and monster formation, and cattle show "alkali disease" manifested by depressed growth, loss of hair and hoofs, and in more acute form in Wyoming the "blind staggers." Yet man is unaffected by selenised wheat in amounts short of chronic intoxication, and several p.p.m. daily can be freely excreted in the urine. Again with copper deficiency, the "deaf ears" and root-crop failure of Schleswig-Holstein are an example of the fact that copper is essential for seeding in plants; the same trace deficiency shows itself in grazing animals by demyelination of cerebellar tracts resulting in ataxia (the "swayback" of Derbyshire and "enzootic ataxia" of Australia); in man, traces of copper are needed for catalysts and oxidising enzymes which, like those of iron, are the means by which the blood performs some of its basic functions. There seems to be little, if any, common ground between defective seeding, demyelination of the cerebellum and anaemia.

4. So far as is known all trace elements are quantitative in the sense that symptoms appear and disappear within certain ranges of metal concentration—e.g., cattle-scouring in molybdenum poisoning appears when the molybdenum content of the pastures is more than 10 p.p.m., and "pinning" in cobalt deficiency appears when the cobalt content of the pasture is less than 0.4 p.p.m. Goitre is endemic in areas where the water contains less than 1 µg. per litre and unlikely to occur where the content exceeds 3 µg. Fluorine "mottling" begins to show in areas with over 0.3 to 0.5 p.p.m. in the water, and fluorine osteosclerosis in areas of bad nutrition where the content exceeds 1 p.p.m. Selenium symptoms have their onset when the grain content exceeds 3 p.p.m., and the cattle ataxias of copper deficiencies appear when the pasture content falls to 1 p.p.m. and are absent at 15 p.p.m. Anaemia is likely when the iron content of the food falls below 15 mg. daily, but iron is less demonstrably quantitative owing to its peculiarities of absorption and excretion, of which much has yet to be learnt. A good deal of iron in the food does not seem to be absorbable (e.g., haematin), and precipitation of the metal in the gut in the form of phosphates and phytates also makes absorption very difficult. McCance holds that iron is not excreted at all, and since hypochromic anaemia may occur with the iron stores saturated it is probable that the body regulates its haemoglobin by absorbed iron. The complication of the problem of iron metabolism is further illustrated by the occurrence of haemochromatosis, in which a dangerous accumulation of iron occurs in various organs when an extra 2 or 3 mg. of iron daily is retained.

5. The action of a trace, like that of any other element, depends upon absorption and hence upon solubility and valency. Insoluble metals like silver are, *ipso facto*, debarred from playing any part in the body chemistry; those, also, which form insoluble salts in the gut are more or less handicapped, apart from the example of iron given above. The importance of solubility is shown by molybdenum, which is in more soluble form in the grass of spring and summer than in winter hay, and hence the symptoms of scouring in grazing animals is most marked in the spring and summer. The monovalent elements are most readily absorbed and excreted (i.e., Group 1, the halogens; and Group 7, the alkali metals, in the periodic table). The divalents (calcium, magnesium, strontium, manganese, cobalt and zinc) are less well absorbed and excreted (between 20% and 70%), partly due to the formation of insoluble phytates, oxalates and phosphates in the gut. Three essential elements—zinc, manganese and iron—are absorbed with great difficulty and not excreted at all via the kidney; iron, so far as is known, has no natural channel of excretion, and zinc and manganese are excreted to some extent via the bowel.

6. The physiology of trace elements is less well understood. The mode of action must be extremely delicate in character, and there is good evidence to suggest that the elements enter into the formation of complicated chemical substances such as catalysts or enzymes, or possibly operate by interfering with the action of such substances; in these metallo-protein compounds the action of the protein is supposed to be as important as that of the metal. The extremely minute amounts required for action by such substances is in keeping with the fact that elements operate in traces. It is, for example, known that pure enzyme preparations are active in amounts under 0.1 to 0.5 micrograms of dry weight and in such dilutions that the constituents cannot be detected by any known chemical means. Enzymes and catalysts have been isolated for iron, copper, zinc². Important outside evidence for such actions also exist for manganese and zinc³, and rather less evidence for fluorine and molybdenum⁴. Iodine, whose trace action is the most pronounced of all (the total requirement being as low as 5 to 15 mg. annually), is in a different category, for it is used in the production of an internal secretion, thyroxine, and "certainly does not act as an enzyme nor has it any known connection with enzyme systems except in so far as it may be regarded as a regulator of oxidising enzyme processes"⁵. It is at present the only hormone known to depend for its synthesis upon the minute amount of any ingested element, but there may be others as

* Swimming, badminton, dancing, "keep fit," etc.

TRACE ELEMENTS IN RELATION TO HEALTH

Trace Element.	Defy. or Excess.	Operative Quantities.	Mode of Action.	Type Affected.	Importance to Health.	Geographical Location.	Remarks.
Boron	Defy.	1-30 p.p.m. according to plant.	?	Plant only	Defective setting of seeds in plants (turnips and sugar beet)	England, Tasmania, Australia	No action in animals. Rats complete their cycle at 0.2 p.p.m. Often lime induced.
Cobalt	Defy.	Begins when pasture content falls to 0.4 p.p.m. Is cured by administration of 0.1 mg. sheep; 0.5 mg. cattle; and prevented by 2 lb. CoSO ₄ per acre.	?	Animals (ruminants) only.	Cachexia and anaemia in grazing animals.	1. "Pining," Scotland. 2. "Bush Sickness," New Zealand. 3. "Nakuruitis," South Africa. 4. "Salt Sickness," Florida. 5. "Enzootic Marasmus," Australia.	Coast disease in Australia is a mixture of cobalt and copper deficiencies.
Copper	Defy.	Swayback begins when pasture content falls to 1 p.p.m. (normal 15 p.p.m.); is cured by a daily dose of 5 mg.; is prevented by the application of 14 lb. of copper sulphate per acre. Man requires 2 mg. daily to prevent anaemia.	Known to act as part of oxygen carrier haemocyanin (in molluscs) and oxidising catalysts, phenolic oxidases, and ascorbic oxidase.	Plant, animal, man.	Defective setting of seeds in plants. Anaemia. Demyelination of cerebellar hemispheres.	"Swayback," Derbyshire. "Enzootic Ataxia," Australia. "Renquella," Peru. "Lecksucht," Schleswig-Holstein.	Coast disease in Australia is a mixture of cobalt and copper deficiencies. Copper is a necessary associate of iron in the prevention of hypochromic anaemia.
Fluorine	Defy. and excess.	Mottling of teeth begins at approx. 0.3 p.p.m. and osteosclerosis at approx. 1.5 p.p.m. in water supplies. Poor nutritional state favours the onset of osteosclerosis.	Known to produce a condition in guinea-pigs like scurvy and may be associated like ascorbic acid with cellular respiration.	Plants not affected. All animals and man.	Mottling of teeth and osteosclerosis.	Various parts of the world. In England—Upper Weardale, Spilsby (Lincs), Maldon (Essex), Oxford, Cambridge, Glamorgan, St. Austell.	There is industrial fluorosis. Human urine normally contains 1 p.p.m. Due to water from wells sunk into fluorine high rock salts, e.g., fluorspar, apatite.
Iodine	Defy.	Endemic goitre is likely to occur if the iodine content of the water is less than 1 µg. per litre and is most unlikely to occur at 3 µg. or more. "1 part of KI in 5,000 parts of table salt in Michigan reduced the incidence of goitre to practically nil". "The total annual requirement may be as small as 5-15 mg.".	Hormone, thyroxine, manufactured in thyroid gland.	Man and animals (domestic and farm)	Endemic Goitre. Cretinism.	Japan is the only country wholly free. Usually mountainous regions (Switzerland, the Balkans, Himalayas, Central Asia Plateau, the Rocky Mountains of N. America and Canada). Older geologic formations and sedimentary formations composed of detritus of older rocks.	The pig in goitre regions suffers from hairlessness with enlarged thyroid and other symptoms. Domestic animals are widely affected. Seaweed and the sponge "accumulate" iodine.
Iron	Defy.	Operative amounts still in doubt. Daily requirements of man about 15 mg. Content of Scottish pastures reckoned as 50-150 p.p.m. Total iron content of body circa 2.8 grammes. About 500 mg. extra required over period of pregnancy.	30-50% of body iron is in nuclear protein, 50-70% in the blood as iron-porphyrin protein compounds. Oxidising catalysts: Cytochrome (intracellular respiration); peroxidase (catalyses oxidation by H ₂ O ₂); catalase (catalyses decomposition of H ₂ O ₂). Oxygen carriers: haemoglobin, myoglobin, chlorocruorin, haemerythrin.	Animals and man.	Anaemia.	Universal.	The problem of iron is much more one of absorption than actual intake. It is absorbed with the greatest difficulty; the presence of calcium and ascorbic acid assist. Haematin is not absorbed.
Manganese	Defy.	Plants contain round about 5 p.p.m.	Enzymic action in chlorophyll chemistry. Seen to be excreted in bile in man.	Plants, animals experimentally, man nil.	Defective pigmentation in leaves (oats, wheat, peas, sugar beet). Defective ovulation in animals (experimental).	Scotland, the Fens, Southern England, various other parts of the world.	Occurs on shell sand deposits.
Molybdenum	Excess.	Symptoms begin at about 10 p.p.m. in pasture and increase up to 100 p.p.m. or so. Normal grass 5 p.p.m. Prevented by 2 g. CuSO ₄ daily by mouth.	?	Animals (ruminants), plants and man nil.	"Scouring" or "Teart."	Somerset mainly, Warwicks., Glos.	Occurs where Lower Lias outcrops. High molybdenum content due to extraction of molybdenum from sea-water by laminaria plants in Lower Liassic times.
Selenium	Excess.	Onset at 3 p.p.m. in grain.	?	Animals and poultry. Plants and man nil.	Loss of viability and monster formation in poultry. Loss of hair and hoofs in cattle (alkali disease and the "Blind Staggers").	Notably South Dakota and Wyoming.	Selenium absorbed and excreted in man without symptoms up to 7 p.p.m.
Tungsten	Defy.	Traces—no definite figures.	?	Plants only.	Stimulates early development of certain plants, but excellent final growth takes place without it.	—	—
Zinc	Defy.	Ordinary diet supplies 0.1 mg. per kilo of body weight and this is sufficient to prevent symptoms in man. Californian soils 1.5 p.p.m. which would be adequate except for the fact that zinc in alkaline soils is relatively unavailable to some species of plants.	?	Plants only.	Defective pigmentation in leaves. ("Rosette Disease" in apples, "Mottle Leaf" in citrus trees, "Yellows" in walnut, "Bronzing" in tung oil trees, etc.) Depigmentation of fur and hyperkeratinisation of skin experimentally in animals.	Various parts of the world. Reported in U.S.A. from Florida westward through Texas, Arizona, California and northward to Canadian border; New Zealand and Australia (except Tasmania); S. Africa and Argentina.	"A survey of the literature suggests that diseases of fruit trees attributed to Zn deficiency may be due to some biological factor as well as a Zn deficiency. The disease does not appear after Zn-deficiency soil has been sterilised".

yet undiscovered. Many trace actions are likely to be complicated by additional factors. Zinc deficiency, for example, which produces "mottle-leaf" and the like in various fruit trees, does not occur when the soil has first been sterilised, though it recurs if a small amount of unsterilised soil is added. Fluorine excess must also be complicated by other nutritional factors, for osteosclerosis is more marked and appears at lower concentrations in the malnourished.

7. The question is bound to be asked, what importance has this for human medicine? So far as our knowledge goes at present man is naturally affected by deficiencies of trace amounts of iron, copper, iodine, and by excess or deficiency of fluorine. Other elements are known to be essential but are not naturally deficient, as, for example, zinc, which in animals has been shown to result in the loss of fur and hyperkeratinisation; but a daily dose of 0.1 mg. can apparently be provided by any diet available to man, so freely is the metal distributed in nature. Much of our knowledge of the chemistry and physiology of these elements in relation to man preceded the recent dramatic discoveries of their effects in animals and plants. Particularly is this the case with iodine, although the acceptance of a trace action in endemic goitre was resisted in the face of overwhelming evidence for a number of years. The importance seems to lie very largely in the realisation of the existence of extremely delicate and complicated processes about which much more has to be learnt. As our knowledge advances the metallo-protein may take a place with the vitamins and the hormones in a large group of substances having trace actions, and the link between those three, of which thyroxine is an example, may strengthen. The story of the trace elements may still be at the beginning, but it seems much fuller than ever before and leaves an irresistible feeling that a new chapter has been opened. The story of the action of iron as part of metallo-protein enzymes of almost fantastically potent properties adds considerably to our respect for this metal, previously considered to be acting only in the oxygen carriers. We are on the threshold of new advances possibly not unlike those of the familiar vitamins, which present a not greatly dissimilar picture of "trace action." They, too, are complex substances essential to metabolism (but without any metal component in the complex molecule); they have quantitative action with symptoms of deficiency, occurring when the intake falls to certain low levels; their action is enzymic or catalytic in character; and daily requirements are measured in traces—as, for example, thiamine (B) 1 mg., ascorbic acid (C) 50 mg., and calciferol (D) 0.025 mg. daily. Perhaps the story of the metallo-proteins when unravelled will be as packed with incident and as important to man as that of the vitamins.

For much of the above information I have drawn freely on the *Proceedings of the Nutrition Society*, for October, 1942.

FOOTNOTES TO TABLE.

¹Barium is found in the eyeball of the ox. Lead is present in hair, more in dark than fair. (McCance, R. A., and Widdowson, E. M. *Ann. Rev. Biochem.*, 1944, 13, 327.) Cadmium is used by the common scallop; lithium is absorbed by man in trace amount (1 mg. daily) to no known purpose.

²Iron enzymes—ascorbic oxidase, phenolic oxidase, catalase, peroxidase. Copper enzymes—ascorbic oxidase, phenolic oxidase, zinc enzyme—carbonic anhydrase. Not all the trace action of iron and copper is enzymic. Iron in haemoglobin and copper in haemocyanin (molluscs) take part in oxygen transport by forming a loose combination which dissociates to give up oxygen in the tissues. The total amount of iron in haemoglobin in the body amounts to several grams, which is far in excess of a trace, yet its replenishment is by trace amounts.

³Following the exhibition of radio-active salts these have been seen to be excreted in glandular secretions, zinc in pancreatic juice, manganese in bile; both appear to take part in chlorophyll chemistry in plants. Zinc has now been found to be a constituent and the only metal present in an enzyme, carbonic anhydrase, which catalyses the reversible action $\text{H}_2\text{CO}_3 \rightleftharpoons \text{CO}_2 + \text{H}_2\text{O}$.

⁴The action of fluorine in relation to bone metabolism could be enzymic, and McCollum points out that fluorosis in guinea-pigs resembles scurvy and deduces an interference with the enzymes engaged in cellular respiration. (*The Newer Knowledge of Nutrition*, 1939, 2-2.) The fact that scouring in molybdenum poisoning and pining in cobalt deficiency occur only in ruminants would be similarly explained.

⁵Personal communication from Dr. C. R. Harington of the National Institute for Medical Research, Hampstead, London.

⁶Personal communication from Dr. H. H. Green of the Veterinary Laboratory, Weybridge, Surrey.

⁷Osteosclerosis would in my opinion not occur unless the amount of fluorine was greater than 1 p.p.m. and at this level only in association with poor general nutrition. At Malden, Essex, with about 4-5 p.p.m. fluorine, there is no widespread osteosclerosis. Reports on osteosclerosis come chiefly from India and among native labourers in South Africa in whom the general nutrition is faulty. Personal communication from Dr. M. M. Murray, Department of Physiology, Bedford College for Women, University of London.

⁸*The Newer Knowledge of Nutrition*, McCollum, 5 Ed., p.253.

⁹*Food Health, Vitamins*, Plimmer, R. A., 9 Ed., p.33.

¹⁰(a) McCance, R. A., & Widdowson, E. M., *Ann. Rev. Biochem.*, 1944, 13, 322.

(b) *Ibid.*, p.326.

BOOK REVIEW

Industrial Nursing : Its Aims and Practice. By A. B. DOWSON-WEISSKOPF, S.R.N. London : Edward Arnold, 1944. Pp. 159. Price 5s. net.

The author of this book has a message : "The nurse who works in industry should always aim at establishing a health service. Let her start boldly, therefore, and call her department 'Health Department,' or 'Health Clinic,' and not 'First-Aid Room,' 'Ambulance Room,' or 'Surgery.'" (Chap. 3.) It is refreshing to read chapter after chapter with this confident, positive approach. The author, moreover, gives an impression of self-reliance and initiative which is infectious and is exactly what industrial nurses require, for they have to-day no easy task. Medical readers may object that the book is rather naive here and there : "Sometimes it may be the nurse's duty to tell her employers that she cannot agree that their method in some particular is right and just." There are many health problems in industry (care of adolescents and of the pregnant woman, teaching of personal hygiene) which are often skimmed in industrial medical textbooks, but which Mrs. Dowson-Weisskopf deals with in a straightforward, practical way. There is also much helpful information on organising and equipping a department, relations with management and workers, the health sections of the Factories Act, and on how to write an annual report. In a second edition it is hoped that the author will reconsider this statement : "A cup of cold water in the face of the hysteric will usually work wonders." The chapter on the "Health Interview" also needs revising. There is a good index and a valuable appendix on suggested standing orders for an industrial nurse. The book can be recommended, not only for the industrial nurse, but also for the medical man who is doing part-time in industry.

The St. Albans and Mid-Herts Hospital have produced an attractive and interesting booklet as a centenary celebration—1844 to 1944. But the booklet does not confine itself to this single hospital and its problems; it discusses hospital planning in various aspects, and contains some excellent illustrations of wards, laboratories, and operating theatres in British and foreign hospitals. There are some interesting diagrams, a discussion of finance and administration. In part the booklet is a plea for the small teaching hospital; it is also a plea for combining efficiency with a pleasant environment and humane treatment of the patient. The booklet can be obtained from the Secretary, St. Albans and Mid-Herts Hospital, St. Albans, Herts, at a price of 2s. 9d. post free.

OBITUARY

C. J. TRIMBLE, C.B., C.M.G., L.R.C.P., D.P.H.

We regret to record the death, in his 89th year, of Dr. C. J. Trimble, late M.O.H. for Preston Rural District. Charles Joseph Trimble had a long and active career in medicine, first as a loved and trusted practitioner in the Preston district, and then, after his retirement, as Medical Officer of Health. He qualified L.R.C.S.I. and L.M. in 1876, taking the L.R.C.P. Ed. in 1877, and the D.P.H. in 1888. During the last war, already in late middle life, he served as O.C. of a base hospital in France, and was mentioned in dispatches on three occasions for bravery and administrative ability. He had been created C.B. for services in the Boer War, and for his work in the war of 1914-18 he received the honour of C.M.G. He served as a Justice of the Peace, was Deputy Lieutenant for Lancashire, served on the County Council, and was a Freemason of 50 years' standing. He was nationally recognised for his work in connection with the Order of St. John of Jerusalem, of which he was a Knight of Grace; and for his lifelong association with the Territorials he was made Honorary Colonel of the 88th Field Brigade, R.A. He served on all the medical committees of the Lancashire County Council, and his wide experience and knowledge of human nature made him a colleague and friend who could be relied upon for wise and unstinted help. The tuberculosis service of the county developed under his chairmanship and stands as a fitting memorial to a man who spent a long life in devotion to duty and the welfare of his fellows. He will be deeply mourned by his daughter, his colleagues, his patients, and many friends in the district.

SOCIETY OF MEDICAL OFFICERS OF HEALTH ANNUAL REPORT OF COUNCIL, 1943-44

NEW MEMBERS AND RESIGNATIONS

During the past session 72 candidates have been elected as Fellows or Associates of the Society: 20 resignations have been received from members on their retirement from active practice or for other reasons, and it has been found possible to retain on the register on the basis of fully-paid membership (provided for in Article 12) one member who has subscribed to the Society for 25 years or more and who would otherwise have been lost by resignation.

The Council welcome the revival of the School Medical Service Group which owing to war conditions and evacuations had suspended its activities. It is also a matter for congratulation that the Association of County Medical Officers of Health have suggested incorporation as a Group of the Society subject to an amendment of the Articles of Association to permit their special relations with another body. Pending completion of negotiations representatives of the Association have been invited to assist the Council in matters directly affecting county medical officers.

DEATHS

The Secretary has to mourn the loss by death since October 1, 1943, of:—

Dr. F. E. Bendix (Deputy M.O.H., East Ham C.B.).	Dr. P. R. McNaught (M.O.H., York C.B.).
Dr. W. E. Bennett (M.O.H., Otley U.D.).	Dr. H. J. Milligan (M.O.H., Reading C.B.).
Dr. W. F. Brown (formerly M.O.H. Ayr and Prestwick Burghs).	Dr. J. T. Neech (formerly M.O.H., Halifax C.B.).
Dr. L. M. R. Campbell (A.M.O. (M. & C.W.) Newcastle C.B.).	Dr. G. H. Patterson (formerly M.O.H. Liverston U. & R.D.s, Dalton-in-Furness and Craigen U.D.s).
Dr. W. F. Chrispin (formerly M.O.H., Castleford U.D.).	Dr. G. H. Pearce (formerly M.O.H., Heckmondwike U.D. and Batley M.B.).
Dr. Thomas Evans (formerly M.O.H., Swansea C.B.).	Dr. Maitland Radford (M.O.H., St. Pancras Met. B.).
Dr. J. M. Glasse (M.O.H., Haltwhistle U.D.).	Dr. A. Semple (M.O.H., Carlisle C.B.).
Dr. R. Green (formerly M.O.H., Stroud U. and R.D.s and Nailsworth U.D.).	Dr. A. J. Smyth (M.O.H., Cambridge M.B.).
Mr. H. F. Jones (S.D.O., West Riding (Yorks) C.C.).	Dr. Wm. Steven (M.O.H., Featherstone U.D.).
Dr. A. E. Kidd (formerly Chief S.M.O., Dundee).	Dr. B. Sweeten (formerly S.S.O., Colchester).
Dr. G. H. Leigh (A.T.O., Lanes. C.C.).	Mr. T. D. Young (formerly Veterinary Officer, City of London).
Dr. J. A. D. Maclean (A.C.M.O.H., Notts. C.C.).	
Dr. J. Macmillan (M.O.H., Woolwich Met. B.).	

PRESENT STRENGTH AND RECRUITMENT

Allowing for resignations and deaths, the membership at the close of the session shows an increase of 28 members, making the total strength 1,834 on September 30, 1944.

HONOURS CONFERRED ON MEMBERS

The Society was much gratified at the honour of knighthood conferred on Sir Allen Daley, and great pleasure was also felt at the award of the C.B.E. to Drs. W. L. Burgess, G. Lissant Cox and C. E. Tangye; the O.B.E. to Dr. Jean M. Orkney, and the M.B.E. to Dr. Helen Standing. The Society also noted with satisfaction the appointment of Drs. J. A. Charles, A. Davidson, and H. M. C. Macaulay to be Honorary Physicians to H.M. the King.

MEETINGS HELD DURING THE SESSION

Again this year, owing to the difficulties of travel and other war conditions, it was only possible to hold two general meetings as follows: November 26, 1943, installation of Dr. R. H. H. Jolly as President for the session 1943-44, and election of new members; May 5, 1943, election of President for 1944-45 (Professor R. M. F. Picken), and election of new members.

WORK OF COUNCIL AND COMMITTEES

During the session there were held four meetings of Council, five of the General Purposes Committee and one of the Journal Committee. Special committees in reference to the Scale of Salaries, the Training of Health Visitors, the Education Act, 1944, and Post-Graduate Health Education, etc., met on eighteen occasions.

CO-OPERATION WITH GOVERNMENT DEPARTMENTS

Several deputations from the Society attended at the Ministry of Health and the Ministry of Education to discuss matters in connection with current legislation and local health administration. Representatives of the Society submitted evidence approved by the Council to the Departmental Committees on Schools and Dentistry. Evidence was also given on housing standards before the sub-committee of the Central Housing Advisory Committee on the Design of Dwellings, and there was a conference with representatives of the Ministry of Labour and the Ministry of Health in reference to proposals for a Home Helps scheme. The Society also accepted the invitation of the Inter-Departmental Committee on Rent Control to submit evidence in that connection.

THE RETIRING PRESIDENT

The thanks of the Society are due to Dr. R. H. H. Jolly for his untiring services as President during the past session. At meetings of the Council he showed an intimate knowledge of the Society's affairs, and by good management of the proceedings he secured the transaction without undue delay of much business which accumulated owing to postponement of meetings during periods of enemy activity. Dr. Jolly presided with distinction at the luncheon on May 5, 1944, when the Society entertained the Rt. Hon. H. U. Willink, K.C., M.P., Minister of Health and representatives of national organisations concerned with health administration. His year of office will be remembered as a fitting climax to his prolonged membership of the Council.

OTHER OFFICERS AND COMMITTEE CHAIRMEN

This report would be incomplete without special reference to the officers and chairmen who have borne a large share of the Society's responsibilities during the past year. Dr. J. A. Charles, as chairman of the General Purposes Committee, made frequent journeys from Newcastle for attendance at meetings and undertook much preparatory work which in normal times would be the duty of a full-time secretariat. The Council wish to place on record their appreciation of the outstanding services rendered by Dr. Charles as chairman during the past two years, and their regret that his new duties prevent his re-election for a further period. Dr. G. F. Buchan has not only continued in office as Hon. Treasurer but he has been mainly responsible for the heavy work in connection with the Society's policy in regard to the White Paper. Professor R. M. F. Picken continued as chairman of the Journal Committee, and also undertook to preside over the Special Committee on Post-Graduate Education in Public Health. By the preparation of memoranda and minutes for that Committee he has greatly assisted in assuring completion of the report and recommendations in the near future. Finally thanks are due to Dr. Massey for his active chairmanship of the Salaries Committee, who will shortly be circulating draft proposals for revision of the Askwith Scale for consideration by Branches and Groups of the Society.

SECRETARIAT

Finally the Council desire to confirm the thanks of the Society to the Active Executive Secretary and his assistants for their success in overcoming the exceptional difficulties of the past year.

REPORT OF THE HONORARY TREASURER FOR THE SESSION 1943-44

Income.—The total income of the Society for the year has been £3,994 15s. 7d. as compared with £3,796 13s. 11d. in the previous year. Included in the total income is an item of £2,744 12s. 9d. for subscriptions. This figure has been fairly constant for a number of years and it is highly desirable that every effort should be made to increase the number of members of the Society.

Expenditure.—The actual expenditure for the year has been £3,298 19s. as compared with £3,258 16s. 1d. in the previous year. One item requires explanation, namely the Auditors' Fees and Accountancy Charges. There has been no increase in the Auditors' Fees during the year, but it became necessary to ask the Auditor to maintain a regular supervision over the accounts on account of the changes of staff and the difficulty in getting anyone expert in the keeping of accounts, book-keeping and double entry.

Journal Account.—It is pleasing to record that the Journal Account which in the year 1942-43 showed a deficit of £72 13s. 2d. shows for the year 1943-44 an excess of income over expenditure of £30 5s. 1d.

Balance Sheet.—The market value of investments at September 30th, 1944, was £10,877 6s. 10d. The increase over last year is accounted for by the purchase of £1,000 of 3 per cent. Savings Bonds 1960-70 during the year.

Staff.—I have again to record my thanks to the Acting Executive Secretary, Sir George Elliston, M.P., and the staff generally for their assistance to me throughout the year.

GEORGE F. BUCHAN,

Hon. Treasurer.

GENERAL PURPOSES COMMITTEE

A meeting of the above Committee was held at Tavistock House, Tavistock Square, London, W.C.1 on September 8, with Dr. J. A. Charles in the chair.

There were present Drs. G. F. Buchan, J. J. Buchan, G. Lissant Cox, Jas. Fenton, Jas. Ferguson, C. Herington, J. W. Hunter, Gordon Lilico, Hugh Paul, Prof. R. M. F. Picken, Drs. E. V. Saunders-Jacobs and H. C. Maurice Williams. Apologies for absence were received from the President, unavoidably detained by a long-standing engagement, Drs. J. G. Anderson, Cyril Banks, Sir Allen Daley, Drs. J. M. Gibson, F. Hall, G. V. T. McMichael, J. A. Stirling and F. T. H. Wood.

The minutes of the meeting held on June 23, 1944, were approved and signed.

Sanitary Officers' Orders.—Dr. Fenton reported that a deputation from the Society, consisting of Dr. G. F. Buchan, Prof. Picken, Dr. Gibson, Dr. J. A. Scott and himself had met Sir Wilson Jameson and other officers of the Ministry of Health on August 1 to discuss the interpretation of the Sanitary Officers' Orders in view of changes following on the Local Government Act, 1929. Dr. Fenton was thanked for his report and it was decided to ask Sir Wilson to submit for the consideration of the Society any draft proposals of the Ministry in this connection.

Home Helps.—Dr. J. A. Scott reported that with Dr. G. F. Buchan and Dr. J. A. Struthers he had attended a conference at the Ministry of Health on August 2 to discuss proposals of the Ministry of Labour for a home-helps scheme which would enable domestic assistance to be available to the old and infirm and to those who, while they were sick and unable to attend to domestic duties, were not sufficiently ill to be in need of hospital treatment. This scheme would not interfere in any way with the rights and duties of local authorities to provide home helps under the maternity and child welfare scheme, but local authorities would appear to be the proper agencies for running the new scheme. Representatives of the County Councils' Association were present at the conference with Mr. Lindsay and Miss Puxley of the Ministry of Health and a representative of the Ministry of Labour.

Both the Society's representatives and the County Councils' Association representatives assured the Ministries that there was a very real need for this home-helps scheme, and that one the whole they thought the constituent authorities would be willing to co-operate. Some discussion took place on which type of local authority was appropriate for the new scheme. The Society's representatives insisted that these must be the authorities who were now the maternity and child welfare authorities. The Ministries were reminded of the very great shortage in the labour pool, and were asked to give an assurance that if it was decided to embark on this new scheme the existing pool of domestic labour for hospitals and institutions, which was already notably short of the demand, should not be interfered with. The importance of correlating the rates of pay for workers under the new scheme with those applying to domestic workers in hospitals and institutions was also stressed. The report was received, and Dr. Scott was thanked for his full record of the proceedings.

Rent Control.—Drs. G. F. Buchan, J. A. Struthers and J. A. Scott reported their attendance on behalf of the Society at a meeting of the Interdepartmental Committee on Rent Control on August 2. The Secretary had since written that the information given by the Society's representatives would be of the greatest assistance to the Interdepartmental Committee in their consideration of the problems and in the preparation of their report. Dr. Scott was thanked for his memorandum on the Society's evidence which will be available later in the proceedings of the Interdepartmental Committee.

Control of Communicable Diseases.—Prof. Picken reported that on Wednesday, August 2, representatives of the Society discussed with officers of the Ministry of Health certain questions relating to infectious diseases. Dr. Charles was in the chair and there were present Prof. Picken, Dr. Scott and Dr. Begg (representing the Society), and Drs. Hutchinson, Stock, Brincker and Mackenzie of the Ministry. In the course of a discussion of the diphtheria prophylaxis returns it was explained that the percentages estimated as having been immunised in Section II of this return were increasingly unreliable, presumably as the result of failure to transfer immunised children to a higher age-group as they grew older. It was agreed that Dr. Percy Stocks should be consulted as to the degree of error arising from the difficulty of tracing deaths and removals of children from a district after immunisation; that in any case there seemed to be no point in asking M.O.s.H. to calculate the percentages based on populations equally known to the Ministry; and that the Ministry would consider asking for a modified annual return (instead of six-monthly) to be prepared after the completion of the four quarterly returns of change of diagnosis, in order to avoid the inclusion in Section III of cases notified as diphtheria but not confirmed as such.

A further discussion was concerned with the applicability to British conditions of the A.P.H.A. booklet on "The Control of Communicable Diseases." The officers of the Ministry stated that the American Public Health Service were anxious to attain uniformity of policy on procedure in connection with infectious disease, and the Ministry had the same desire. It was realised that a document carrying Government authority must be as far as possible accurate in every detail, and certain criticisms were made to the factual content of the booklet. It was noted also that certain diseases of concern to health departments in this country were not mentioned. With these considerations in mind, it was

agreed that the booklet should be further examined with a view to any revision of the contents which might be suggested by officers of the Ministry to their colleagues in the United States. It was further agreed that Dr. J. A. Scott and Dr. N. D. Begg and other members of the Society would be willing and available to collaborate in the revision of the booklet.

Prof. Picken was thanked for his report of the conference, and the Committee approved the proposal for a further meeting on Oct. 12 to discuss the appointment of bacteriologists for field research, and the discrepancy between notifications and known cases of typhoid fever.

Public Analysts and the P.H.L.S.—A letter from Sir Weldon Dalrymple-Champneys was considered in reference to alleged encroachments by the Emergency Public Health Laboratory Service on the work of public analysts, particularly with regard to the bacteriological examinations of public water supplies. The Committee were unaware of any complaints in this connection, and agreed that local authorities should remain free to refer public bacteriological work to University and private laboratories, or to the E.P.H.L.S., as they see fit.

Representation of the Society.—In response to an invitation from the British Council for Rehabilitation, co-ordinating body for organisations concerned with various aspects of rehabilitation, Dr. James Ferguson was elected to represent the Society on the Council, and undertook to report to the Society from time to time on the Council's activities.

A proposal to nominate a representative on the National House-Builders' Registration Council was deferred for further consideration.

Municipal Staff College.—Proposals for the creation of a Municipal Staff College, forwarded by the Association of Local Government Financial Officers, received sympathetic consideration, but it was decided that such a college could not provide specialised medical courses to meet the needs of the Public Health Service.

Draft Regulations under Education Act, 1944.—Dr. G. F. Buchan and Dr. J. W. Hunter were appointed to attend at the Ministry of Education for a preliminary discussion of these draft regulations.

The Committee then adjourned.

BRANCH NEWS

NORTHERN BRANCH

President: DR. IAN MCCrackEN (M.O.H., Durham C.C.).

Hon. Secretary: DR. J. A. CHARLES (M.O.H., Newcastle-upon-Tyne).

The Annual Summer Meeting of the Branch was held in Newcastle-upon-Tyne, on July 28. The President and 19 members were present. The minutes of the meeting held on April 22 were read, confirmed and signed by the Chairman.

Dr. Ian E. McCracken was elected to represent the Northern Branch on the Court of Governors of the Newcastle-upon-Tyne Dental Hospital.

Officers were elected for the session 1944-45 (see PUBLIC HEALTH, October, 1944).

It was agreed that Dr. Grant be re-elected and that Dr. Tilley be elected in place of Dr. Dickinson to serve on the Branch Council Executive Committee of the B.M.A. Dr. George Hurrell and Dr. J. B. Tilley were re-elected as the Branch representatives on the Executive Committee of the Newcastle-upon-Tyne Division of the B.M.A. It was decided to invite the North of England Branch of the B.M.A. to elect a general practitioner representative to serve on the Northern Branch of the Society. The Hon. Secretary was instructed to express to the North of England Branch of the Association the warm appreciation of the services of Dr. James Hudson during the past session and to state that his re-appointment would be welcomed.

Dr. Grant asked what had happened to the Society's plan for a National Health Service. Dr. Charles informed the meeting that the Council of the Society had had before them the various recommendations of the Branches and had held one meeting, though two further meetings arranged had to be postponed. He stated that the Society was aware of the fact that the White Paper did not have much to say regarding Medical Officers of Health or of the Public Health Service as a whole, but the explanation given was that it was assumed that the Public Health Service would continue very much on its present lines.

Dr. Hebblethwaite enquired as to the progress of the special committee set up to consider the revision of salaries of M.O.s.H. The Hon. Secretary informed members that this special committee had held three meetings and decided to ask for an *ad hoc*

20 per cent. increase. With the support of the Society and the B.M.A. the proposal would then go before the associations of local authorities.

SCHOOL MEDICAL SERVICE GROUP YORKSHIRE SUBGROUP

President: DR. G. E. ST. CLAIR STOCKWELL (School M.O., Leeds).

Hon. Secretary: DR. N. J. S. NATHAN (Assistant M.O., West Riding).

The first meeting of this Sub-Group was held at Leeds on June 16. The chair was taken by Dr. E. C. Benn, President of the Yorkshire Branch; 28 members and visitors were present.

The President and Secretary were elected (see heading), and also a Committee of 7 members. It was suggested that four or six meetings should be held each year, with a clinical week-end, and it was left to the Committee to make the final decisions.

Dr. E. C. Benn read a paper on recent trends in the practice of infectious diseases. After a lively discussion a vote of thanks was accorded to Dr. Benn for his interesting address.

EAST MIDLAND SUBGROUP

President: DR. H. L. BARKER (School M.O., Ilkeston).

Hon. Secretary: DR. G. G. AUCHANAN (School M.O., Newark).

A meeting of the Sub-Group was held in Nottingham on July 21. The President and eleven members were present. The minutes of the meeting held on May 19 were confirmed and signed.

A paper on the new Education Bill was read by Mr. Whitfield Scorer, Director of Education, Ilkeston. He dealt with matters chiefly affecting the work of the School Medical Service and the position of school medical officers. After an interesting discussion a vote of thanks was accorded to Mr. Scorer.

YORKSHIRE BRANCH

President: DR. E. C. BENN (Med. Superintendent, Seacroft Hospital, Leeds).

Hon. Secretary: DR. J. M. GIBSON (M.O.H., Huddersfield).

A meeting of the Branch was held in Leeds on July 28, when 21 members were present. The minutes of the meeting held on June 30 were approved.

It was resolved that the Secretary place on record the loss sustained by the Society by the death of Dr. P. R. McNaught on July 6 last, and should express to his widow their sympathy.

Information was received that 8 new members had been accepted as members of the Society and would be attached to the Yorkshire Branch.

Before demonstrating the equipment used in Mass Radiography, Dr. Frank Ridehalgh, Medical Director of the St. James' Hospital (North), Beckett Street, Leeds, gave a short paper on the future of the tuberculosis service. He said that the outstanding features of the disease were its insidious onset, its chronic course, the fact that there was no specific treatment, and that its maximum incidence occurred during the working period of life. Much damage was done before the disease was recognised, at which stage treatment often could not effect a cure. Poverty led to tuberculosis, and tuberculosis to poverty. One of the weaknesses of the Tuberculosis Service had been that treatment had been based upon local authority areas. The standard of the treatment given had varied greatly—some of the County Boroughs not being large enough to provide a first-class service. Another weakness was that the present administrative schemes were, in the first instance arranged by a lay committee, which did not, in many cases, appreciate the difficulties and requirements of the service. It was carried out under the auspices of the M.O.H., with a clinical tuberculosis officer, who was divorced from the other public health problems so often associated with the spread of tuberculosis.

For improvement, Dr. Ridehalgh suggested, first of all, greater attention to the welfare of the family (1) by supervision; (2) by increased grants; (3) by better housing; and (4) by greater attention to general hygiene, particularly to the pasteurising of milk.

Dr. Ridehalgh suggested regionalisation of areas to provide an efficient service. The Region should be large, with a Specialist in complete charge of the whole organisation; within the region there should be smaller dispersal areas, each with its own sanatorium of a capacity of from 200 to 250 beds. The whole service should be autonomic and not under the direct control of the public health department. Moreover, the staff of the service should be more highly trained than was generally the case at present, and there should be closer liaison in the training of medical students, so that a wider knowledge of tuberculosis and its problems would be made available for all in training. An important point for future progress was that they should no longer

rely upon the patient to report to the doctor when he felt ill groups and various sections of the public should be examined from time to time by mass radiography—only in this way could the early signs of the disease be detected. One mass radiography set could deal with approximately 1,000 cases per week, and the cost of this was from £6,000 to £7,000 per annum, a formidable difficulty. Dr. J. F. Galloway pointed out the dangers of leaving the tuberculosis problem in the hands of highly-trained specialists who would incline to be obsessed with one aspect of the problem and neglect other less obvious but equally important aspects. Dr. J. M. Gibson said that many of the problems of tuberculosis also affected other branches of the public health service (e.g. infantile mortality), and it would be unwise to attempt to place the service in the hands of specialists, and separated from public health work generally. He knew that there was a move in this direction at present, but he thought that the best results could be ensured only by a complete co-ordination of all the services through the existing public health service.

Dr. Ridehalgh and his staff demonstrated the mass radiography plant. An exhibition was also given of films already taken and of cases where the disease had been detected as a result of these.

Dr. Benn proposed a vote of thanks to Dr. Ridehalgh and his staff for the excellent arrangements for the meeting, and for the valuable address and demonstration.

EAST MIDLAND BRANCH

President: DR. M. L. BERY (M.O.H., Lincoln).

Hon. Secretary: DR. J. A. STIRLING (M.O.H., Chesterfield).

A meeting of the above Branch was held at Nottingham on Sept. 21. The President was in the chair and 16 members were present. Dr. Graham installed Dr. Bery as President of the East Midland Branch for the Session of 1944-45, and Dr. Bery suitably replied. A unanimous vote of thanks was accorded to Dr. Graham, the retiring President, for the valuable services rendered during his year of office. The minutes of the last meeting were read and confirmed.

Dr. Bery gave his presidential address entitled "Clinical Duties and the Medical Officer of Health." He dealt with his subject informatively and was warmly thanked for his paper.

A further meeting of the Branch was held in Nottingham on Oct. 12. The President was in the Chair and 31 members were present. The minutes of the last meeting were confirmed.

Dr. Beynon, Director of the Nottingham City Mass Radiography Centre, gave an interesting talk on the administrative and clinical working of the Centre, and a large number of questions were asked. There was an inspection of the Centre, followed by a projection of miniature and large films.

MIDLAND BRANCH

President: DR. A. B. GRIFFIN (M.O.H., Worcester City).

Hon. Secretary: DR. H. PAUL (M.O.H., Smethwick C.B.).

The first meeting of the Session was held in Birmingham on Oct. 5. The retiring President (Dr. Griffin) and 30 members were present. The minutes of the previous meeting were confirmed and signed.

Dr. Griffin installed Dr. H. B. Binks as President and wished him a successful year of office.

Dr. Binks then delivered his presidential address on personal space and its necessity for the health of the individual, in which he made a plea for a scientific basis for regulations defining the minimum amount of space per person in movable and fixed dwellings, schools, theatres, trains and buses. After a discussion, a cordial vote of thanks was accorded the President for his address. A resolution was read from the Branch Council recommending the setting up of a standing committee to keep under review the Government's proposals on a national health service, and to report to the Branch as and when necessary. It was agreed that the following should form the Standing Committee: Drs. Jolly, Macintosh, Walton, and Wyndham Parker, with power to co-opt.

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EDITORIAL

The B.M.A. and the White Paper

The account of the Annual Representative Meeting of the B.M.A., which was held at the end of the first week of December, was extensively reported in the Supplement to the *British Medical Journal* of December 16th. The meeting was largely attended, and the numerous motions on the White Paper were skilfully handled by the Chairman of the Representative Body and the Chairman of Council during the debate which ranged over four days, the final outcome of which was thus summed up by Dr. Dain on the last day:—

"We have expressed ourselves in favour of development of the service.

"We have disapproved of the White Paper as it stands.

"We have decided to negotiate.

"We have appointed our share of the Negotiating Body.

"We prefer the service to proceed by evolution from N.H.I. by first the development of the hospital system and then the extension of the general practitioner services.

"We have stated emphatically that we do not wish to be employed by local authorities, that there should be no civil direction, that there should be no whole-time salaried service for general practice, and that we shall have no clinical control.

"We have instructed our negotiators that their first action shall be to try to agree with the Government the form of administrative structure, and that no action shall be taken in the matter of negotiations until the administrative proposals have been agreed."

A motion by Glasgow early in the meeting summed up the points of opposition, and put forward what was until the beginning of this war considered a desirable way of reform. The motion, which was carried, read thus:—

"That while the A.R.M. is prepared to continue a panel service and would welcome its extension to dependants, which for a quarter of a century it has advocated, and while it desires that cottage hospital facilities, including x-ray and other diagnostic facilities, should be available to every practitioner, together with access for their patients to consultants, it is wholly opposed (a) to a whole-time State-salaried service for general practitioners; (b) to civil direction of practitioners, to government of the profession by local health authorities, in short, to most of the machinery of the White Paper; and (c) to any and every measure which tends in any respect to limit the freedom of judgment and of action of the practitioner or to weaken his full responsibility for his patient."

The B.M.A. also, as expressed in its 1938 Grey Book on a General Medical Service, advocated the two-way extension of

the N.H.I. (1) to include consultant and specialist scheme advice and auxiliary services, and (2) to include in it the dependants of the insured and others of like economic status. The A.R.M. passed a motion on the National Health Insurance Scheme:—

"That health legislation should proceed by evolution, and the Representative Body is of opinion that the objects aimed at will be achieved by completion of the National Health Insurance service to embrace institutional, specialist, and all auxiliary services, and when this is accomplished the expansion and extension of National Health Insurance to dependants of those insured and to others of similar economic status."

We may link these motions with one on the 100% issue, which stated:—

"That pending further information . . . there be affirmed the view of the A.R.M., 1943, 'that a comprehensive medical service should be available to all who need it, but it is unnecessary for the State to provide it for those who are willing and able to provide it for themselves.'"

There seemed to be a stiffening of opinion on the 100% issue. Many men of course are opposed to the universality of a medical service because they fear a loss of income if private practice comes to an end. But it would be falsifying the picture to say that this is the dominant motive with all who oppose the inclusion of the whole population in a comprehensive national health service. There is a genuine fear that such a service would in time end up as a whole-time, salaried, State medical service, and that this would hamper initiative in a profession traditionally free from State control.

It is clear that this and all other issues will remain insoluble until a satisfactory administrative structure is erected which will be fit to accommodate a new service. So far as the B.M.A. is concerned, those who negotiate for it will be bound by the motion put towards the end of the meeting and carried unanimously:—

"That it be an instruction to the Association's representatives on the Negotiating Committee that, without prejudice to other issues, including the 100% question, remuneration and compensation, consideration of administrative structure, central and local, should precede consideration of all other questions, and that agreement on this subject is an essential prerequisite to discussion of other subjects."

If real headway is made on the problem of administration, and a system is devised which meets with a majority approval from the profession, then opposition to universality of the service would have no logical basis. Whether all people would avail themselves of a universal comprehensive service is another question.

THE MEDICAL OFFICER OF HEALTH*

By Professor RALPH M. F. PICKEN, B.Sc., M.B., CH.B., D.P.H.

In choosing a topic which might be appropriate for this occasion I have been influenced by the fact that little has been said about the place of medical officers of health in the reconstructed medical services which are now being planned, and also by the consideration now being given to their training. I have therefore thought that it might be profitable to review briefly the medical officer of health's functions. I am assuming that he is the undisputed head of the local health department. What has concerned me for a long time is the best way in which he can devote his professional knowledge and training to promoting the health and well-being of the community.

We are approaching the centenary of the appointment in Liverpool of the first medical officer of health, so that our branch of medicine is of some maturity. Let us hope that our ageing will not take the form of the senescence of the individual but rather of the evolution of the species. Until the beginning of the present century the vast majority of medical officers carried on active medical practice, usually general practice, concurrently with their official duties; and those who took whole-time appointments were usually men of some seniority who had already had wide clinical experience. In spite of the obvious defects of the part-time system, both these types of medical officer benefited from the fact that their feet were firmly planted on medical ground. They could hardly avoid taking a broad view of the public health field. When I joined this Society in 1912 as a member of the Scottish Branch, I was deeply impressed by the wide vision of several of the medical officers of the cities and counties who were then the fathers of our service—and not least with some who did not seem to be held in great esteem by the lay councils they served. Their observations, as recorded in their annual reports, ranged widely over the state of the health of the people of their area. While they naturally stressed the environmental defects so glaring in their own time, and the epidemiological and institutional aspects of the problem of infectious diseases, they were constantly probing into largely unexplored realms of what it is now fashionable to call social medicine, as strikingly revealed by the writings of J. B. Russell and A. K. Chalmers of Glasgow. They contributed extensively, but not excessively, to medical literature. What they wrote was of general as well as sectional medical interest. They were among the few who had ready access to the facts bearing on communal health and they had time to study them. They were not overburdened with the management of large executive departments or with attendance at innumerable committee meetings.

The change in the complexion of health departments brought about by the inception of the personal health services toward the end of the first decade of this century is so familiar to this audience as to require no description. Circumstances forced it upon us, and, indeed, there was no one in the professional field so well qualified for the new tasks as the medical officer of health. The question which exercises my mind is whether we realise how it has altered our professional character, and whether the change has been all to our good. In this connection I speak as one who has left the public health service, and, looking back, can realise both what I have lost and what I have gained. I should like to see conditions established which would enable men with a profound interest in the public health to retain practical contact with the material of study which a health department affords and which I have lost, while having at the same time enough relief from the daily round to make use of it for the general benefit of mankind. This conception of the medical officer of health raises questions as to what we mean by public health administration and whether in its narrower sense we should have to regard it as our first duty.

Administration, I suppose, is management, and public health administration might therefore be narrowly defined as management of a public health service. There is sound reason

for the local government system which places the management of its professional and technical departments in the hands of professional and technical men or women. It is almost the only way of ensuring that a service which depends for its success on the application of specialised knowledge is not perverted to fit administrative convenience; and it also ensures that lay committees are advised by responsible officers who have scientific and technical knowledge of the subjects under deliberation. But if the medical officer of health allows himself to become so engrossed in the managerial side of a large modern health department that he has no time to keep in touch with the basic medical and scientific thought which justifies its existence and which ought to mould its development; if he becomes so remote from the main channels of medicine that he is entirely and uncritically dependent upon the advice of other medical specialists and is merely their mouthpiece, to that extent he strengthens the case of those who contend that the chief official of the department need not be a medical practitioner at all. I am apprehensive that the great expansion of public health departments may end in medical officers of health becoming mere business men, without constant refreshment from the fountains of medical knowledge. I should be glad, therefore, if it were generally recognised by local authorities that the administrative function of a medical officer of health is primarily to secure that the administrative machine provides the best possible medium for allowing specialised and technical knowledge free play in the interest of the public, and to integrate and hold the balance between the various health services, but that he should not be burdened with too much detail of management.

Even the medical officer of health of a small area, or the officer in a large department who has not yet reached a senior post, should not be called upon to fill every hour of every working day with routine duties. His value to the community, I believe, depends largely on the contacts he can maintain with the advances in medical knowledge. There should be a reasonable amount of release for attendance at medical and scientific meetings which the senior officers of large departments invariably enjoy. Further, there is almost no limit to the field of medicine which the present or prospective medical officer of health should survey in relation to the health of the people in the area he serves. Wide reading is necessary if his mind is to be attuned to the problems arising in connection with these observations. I know by personal experience that this range of reading cannot be overtaken entirely in what is generally regarded as off-duty time.

It may be said that local councils could not be brought to understand that this is a profitable way for their salaried officials to spend their time. It is no doubt true that a substantial proportion of councillors think that they have bought the perfect article when they appoint an official with a medical and post-graduate qualifications, and that he ought to have nothing more to learn or discover. Already, however, they are to some extent influenced in their opinion of him by the esteem in which he is held by his medical colleagues, and I have no doubt that this influence will be greater in the future than it has been in the past. His colleagues' esteem will depend partly on their judgment of him as a medical man and as a contributor to the advancement of medical knowledge.

Let us consider, then, the professional criteria which might be thought to justify the ranking of the medical officer of health in the judgment of his colleagues as a medical specialist. I suppose a specialist may be regarded as one who has mastered a subject, either a narrow and highly technical one like anaesthesia, or broad like the field of the consulting physician. He almost invariably carries the hall-mark of a higher academic qualification. He tends to be judged by his professional brethren not only by the practical aid he can give them but also by the extent to which he has used the opportunities offered to him by the appointments, paid or unpaid, which he has held, to probe more deeply into the aetiology, diagnosis and treatment of disease than is possible for the majority of general practitioners. We have our higher qualification and our years of experience in the public health field. We are not chosen, however, to exercise our skill by those who are

peculiarly fitted to judge of our competence, and this may be one reason why our medical colleagues are sometimes inclined to look askance at us. I think that, in course of time, the method of selection of medical officers of health is bound to approximate to that generally in force in universities and some teaching hospitals. If so, the use a candidate has made of the material at his hand for research in the public health field will count more than it has in the past.

What research material, then, is available to him? He has, of course, usually had access to clinical information or facts about nutrition and the physiological state of the people gathered through the school health and maternity and child departments, but unless he is personally engaged in the routine work of these departments he will generally regard the officers so engaged as having first title to it. If he has been an assistant in a large area or medical officer of health of a smaller area he is likely to have had to handle epidemics which merit close investigation and are worthy of publication; the large number of such outbreaks brought to light since the inauguration of the Emergency Public Health Laboratory Service shows by implication the extent to which they have been hitherto unrecorded. There are many other fields in public health which afford opportunities for profitable enquiry, but few of them are specially within the province of the medical officer of health. The material which is peculiarly the medical officer of health's own is statistical. Through it he has been able since his post was first created to take a bird's-eye view of the health of his area and by his own personal knowledge to correlate the data with the circumstances under which the people live and work. The earlier medical officers of health made full, if not always very skilled, use of this opportunity for inquiry, and by means of it did much to awaken the minds of the public and other members of the profession to public health problems. Perhaps because we have become so encumbered with running the service machine, but probably also because the expert statisticians have raised so many statistical bogies to frighten us off, we have largely ceased to use this material except in routine and sparsely annotated reports. Where the collection of the data has been in our own hands, as for instance in the case of infectious disease or the recording of immunisation, we have not always gone to the trouble of so purging the records that conclusions of real significance could be drawn from their analysis. The medical officer with a keen eye for the flashes of light that numerical data can be made to throw on medical and social problems will also turn to national statistics, to which he usually can have ready access. Yet within the past year the two most illuminating but simple analyses of mortality figures have come from outside our ranks: one by a lay statistician on the infant mortality which has been our intimate concern for 40 years, the other by an eminent physician on the strange behaviour of the mortality from peptic ulcer.

It seems likely that a new system of collecting morbidity statistics will be inaugurated as soon as possible after the war. These records will be of great local as well as national interest. No one is so well entitled to handle them locally as the medical officer of health. They will open up a wide field of investigation. We shall begin to learn what diseases and disabilities affect different age and sex groups and social and occupational classes in localities within our areas, and perhaps be able to draw conclusions as to their causes. I submit that it is in this sort of service to our colleagues and the public that we should specialise, as our public health fathers did before us with much less ample material. The interpretation of such data is a medical function requiring up-to-date medical knowledge, even if their more meticulous statistical manipulation must be in the hands of experts in that science, who will, I hope, find their place in public health departments.

I suggest, therefore, that medical officers of health should not willingly let themselves be diverted from abstract medical preoccupations to the exclusive handling of medical business. They must, of course, take more regard of management than clinicians, but I should like to see them continue to exercise a scientific technique and submit to a scientific discipline founded on a wide and up-to-date knowledge of medicine

which would leave no doubt in either the medical or lay mind that they were practising a medical specialty. That specialty, from the nature of their functions, involves the exploration and presentation of the phenomena of health and disease affecting people in the mass—a study which should not repel us because it is called statistical.

ON THE INCIDENCE OF SCABIES

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"Among the parasitic diseases that have been known in every age and in all parts of the world, the itch takes the foremost place." "Historically and geographically considered, the parasite is co-extensive with the human race itself."—HIRSCH.

That scabies or the "itch" was a condition well known to savants of ancient times is, perhaps, the general consensus of opinion, and Hebra quotes as . . . "the first indisputable reference to the *acarus scabiei* a work entitled *Physika*, written in the twelfth century by St. Hildegard, a Lady Superior of a convent in the Ruperts-Berg, near Bingen." In this work mention is made of remedies against the "itchmite," then known as *Suren*. Avenzoar, the great Moslem physician who died in Seville in 1162, is, however, credited by many as being the first to discover the itch-mite, and certainly as the first reputed parasitologist after Alexander of Tralles (525–605) there is, perhaps, justification for this view. Hebra quotes biblical references to support his contention that scabies may have been present among the Israelites in Egypt and, in addition, mentions such ancient Greek writers as Aristotle, Galen, and Actuarius as being acquainted with the disease, while . . . "in the works of the Latin writers Horace, Cicero, Ausonius, and Juvenal there are passages in which the word scabies is used metaphorically or ironically." Conversely, there were other reputable clinicians who thought differently. Rayer (1835) stated that the condition as described both by the Greeks and the Romans was not the itch, and of Galen says, "There is nothing to authorise the assertion that this writer was acquainted with the vesicular disease termed itch in England, gale in France." In similar vein Sir John Pringle (1775) writes, ". . . I should rather conclude, that . . . the itch was either altogether unknown or at least uncommon among the ancients; since they take such particular notice of other cutaneous foulnesses, and, as I think, omit this wholly." On balance, however, it would appear that the "itch" is of considerable antiquity, and from early times interest in the disease has waxed and waned—whether in sympathy with a rising or falling incidence one cannot say with any degree of certainty. It is, nevertheless, apposite to mention that in more recent times the two war periods of 1914–1918 and 1939–1944, which have, respectively, seen a considerable increase in the incidence of the disease, have been productive of much all-round research and consequent literary activity.

Geographical Incidence

The universality of scabies cannot be in doubt (Hirsch, 1885), but there is evidence for assuming that some countries or Continents appear to be more prone to the disease than others. Harlingen (1895) stated that in America only 1% of skin diseases were due to scabies, whereas eczema accounted for 31%. "In Europe, on the other hand," he continues, "the unwashed populations furnish a larger proportion of scabies than of any other skin disease." While being somewhat unpalatable to Europeans, this statement contains more than a germ of truth, although if uncleanness were the sole criterion to an elevated incidence one might cite other Continents which would, seemingly, have a clearer lead in the contest. However, in America, only ten years before Harlingen's observation, the medical fraternity of Boston were much concerned with the alarming increase in scabies. In Greenhaugh's dispensary the incidence in 1879 was 0.4%; in 1884 this was up to 8.5%, and a year later 18%. Of England, Jackson (1902) stated that it was an everyday occurrence to

* Presidential address to the Society of Medical Officers of Health on November 17th, 1944.

meet new cases in the dispensaries, whereas previously it was uncommon. McCall Anderson (1894) showed that it was a common disease in Scotland, occurring 72 times in 2,000 private cases, and 5,810 times in 38,094 hospital cases. In an earlier publication (1887) the same author recorded an incidence of over 25% in 10,000 consecutive patients having skin diseases, whereas in a series of 1,000 private patients an incidence of almost 4½% was apparent. Further afield, and of more recent date, Sheppard (1940) reported that in the Madras Presidency of India during 1938 there were 884,015 cases of scabies admitted to hospital.

These are but a few examples taken at random.

Scabies in War-time

There is little doubt that wars have affected the incidence of scabies, and one gathers from the literature (Hirsch, 1885; Friedman, 1937, 1941) that in the Napoleonic wars the prevalence of the disease in the French armies must have been enormous, involving not only the rank and file but many officers and even, so it is reputed, Napoleon himself. Hirsch tells us that "... the sufferers from the itch in the French armies were counted by the hundred thousand." Friedman (1941) cites much evidence (Duhring, L. A., 1886; White, J. C., 1889; Shoemaker, 1896) to indicate that during and just after the American Civil War the incidence of scabies in both military and civilian circles was considerable. In an analysis of British Army casualties admitted to hospitals in various parts of the world during the war and peace-time transition period of 1916-1920 (Mitchell and Smith, 1931) scabies was found to be the greatest numerical offender of all diseases admitted to hospitals in the United Kingdom, with the exception of influenza. During the war of 1914-1918, the increasing incidence of the disease provided a somewhat similar problem to the present one. But the opportunities of "spread" in the civilian population are much enhanced now, and one supposes that the mobile type of fighting of modern armies is more likely to favour the spread of the complaint than did the static trench warfare of the last war, although the contact is more fleeting. In past campaigns facilities for the examination, diagnosis, and treatment of scabies must have been far from ideal. It is most likely that the opportunities for "spread" in the armies of earlier days must have been great when one remembers that before Renucci's demonstration of the mite in 1834 the acarine nature of the disease was not accepted by the majority of clinicians, and recalls Hebra's reminder that, even so late as 1863, Devergie, a reputable Paris physician, was writing that "scabies may be a spontaneous disease"—a "throwback" to Sauvage's theory of spontaneous generation, so strikingly supported in later years by Bateman, 1813, and Dendy, 1827.

Recent Incidence in Great Britain

In Circular 2517 (November 14th, 1941), the Ministry of Health drew attention to a regulation designed to give local authorities added powers to deal with the increased incidence of scabies "... which has resulted from war-time conditions such as overcrowding and difficulties in maintaining personal cleanliness." This was a logical sequel to the numerous reports of the alarming increase of scabies. But the incidence had been rising for a number of years before the war, and the mass movement of the population which the pre-war crisis and later, on a bigger scale, the war itself had entailed was an important factor.

Gray (1941) stated that "... scabies has increased very much during the last ten or twelve years and may increase still further as a result of war-time conditions," a prophecy which has been amply fulfilled. The same writer, taking the L.C.C. schools as representative of the general population, showed that the incidence of scabies had decreased from the 1919 post-war figure of 5,794 to 339 in 1926, and then had increased, at first slowly and then more quickly, to 5,768 in 1938. From the various school authorities came hints of increasing incidence. Grant (1939) reported an increase of 151 cases in 1938 over 1937; Potts (1940), an increase in 1939 with an accompanying drop in school attendance; Carter

(1941), a 1938 increase in three large localities varying from 60% to 100%; Mellanby (1941) wrote that the majority of school medical officers' reports mentioned an increase in scabies and he was convinced that this had begun well before the war. His further observations (1941) on the incidence of scabies in infectious diseases hospitals led him to conclude that the disease was not equally common throughout the country. He quotes 2% as an approximation of scabies among the population as a whole, and in a later publication (1943) states that it is probably as high as 5% in some sections. Coleman (1942) places the former figure at 1.6%, and McCracken (1942) at under 2%. Percival (1941), drawing upon data collected from consultant clinics in Edinburgh, gives the following table:—

	Royal Infirmary, Edin.	School	Total
1938	221	509	730
1939	250	580	830
1940	307	868	1,235

This increase was apparent in spite of a decreasing population. That this rise was not merely confined to the civil population was evidenced by Carslaw and Swenarton (1941), who stated that 20 months of war-time experience had shown scabies to be the commonest skin disease in the Navy. Carslaw (1942) stated subsequently that the large incidence in the Navy was due to the great increase of scabies in big centres of population. It is well to remember, however, that the increase has been universal, whether in large or small or in urban or rural districts, although, admittedly, as has been indicated by Mellanby (1941), the disease may not be evenly distributed throughout the country. It is suggested, however, that the vagaries in incidence among comparable communities may be directly related to the keenness with which "contacts" are followed up and further sufferers revealed by experienced visitors.

High Tide and the Turn

In Durham County, during 1938, the number of scabietic school children attending the school clinics and the number of attendances for treatment were, respectively, 408 and 1,186; in 1940 the figures were 1,044 and 5,357; in 1941 they were doubled at 1,918 and 10,793; and in 1942 they had reached a peak at 2,759 and 13,238. During 1943, however, the County statistics have shown an astounding transformation, in which the relevant figures are given as 1,613 and 7,607 respectively, which represents a comparative decrease of 41.54% and 42.54% respectively on the 1942 figures. Graph I (q.v.) relating to the incidence of scabies among West Bromwich school children shows a similar trend in which a peak incidence was reached in 1942 at 33.5 per thousand (slight though the advantage was over the 1941 figure of 33.4 per thousand), whereas 1943 was again noteworthy for a substantial decline to 20 per 1,000. The first six-months period of 1944 denotes an equally impressive recession at the rate of 14.06 per thousand per annum.

If, therefore, one reads the signs aright it is probable, though necessary of confirmation from other large communities, that these figures from two representative administrative areas indicate a nationally declining incidence in the disease.

Spread

Opinions on the cause of the recent phenomenal war-time prevalence have varied widely. Silcock (1941) was convinced that war-time evacuation had played the most important part, a view supported by Bigham (1941), who stated: "Since evacuation began scabies has developed from a nuisance to a scourge." Stewart (1941) suggested shelter life as the primary factor in his district; Airey (1941) felt that the greater interest shown by general practitioners under war-time conditions was the true solution. Hellier (1941) and Mellanby (1942) were of the opinion that the increase was periodic (cyclic), and latterly Mellanby (1943 and 1944) has endorsed this view.

Discussion

Although evacuation and shelter life must undoubtedly have played some part, they surely cannot alone be the cause of the widespread national increase. In the writer's late districts of Blaydon, Ryton, and Whickham, such theories were not feasible, since the movement of population was if anything away from the area, and inward evacuation was of little moment. Shelter life, too, as such and in comparison with the South of England, was non-existent; yet the increase in scabies was definite. The disease has therefore increased even in compact communities with declining populations. Why should this be so?

In my experience a comparatively small proportion of cases coming to the notice of local authorities are reported by G.P.'s, and many cases referred by them for treatment have included pediculosis, seborrhoeic dermatitis, eczema, flexural dermatitis, urticaria papulosa, and even psoriasis. Mellanby (1943) has recently placed such errors as high as 25% in some districts—an indication of the frequency of doubtful diagnoses. So presumably the G.P.'s contribution cannot have been great. Until more detailed statistical information accumulates over many years, the question of periodic (cyclic) increase must remain an unknown quantity.

Mellanby (1942) suggested three "significant" causes of an increased prevalence: (1) the inability of young doctors to diagnose the condition during the inter-war period; (2) the failure of the public to seek medical advice for a condition which they mistakenly accepted as due to their "blood being out of order"; (3) the danger of "carriers" harbouring the disease for "periods of several weeks or even months" without the typical picture of clinical scabies developing. Mellanby feels that these factors "should probably suffice to account for the periodicity in the disease without calling into question any marked change in social habits." I would suggest that a "marked change in social habits" such as occurs during a war, typified by colossal massings and movements of people under abnormal conditions, is more likely to be productive of an epidemic than points (1), (2), or (3) singly or combined. Naturally point (3) is of great moment; and the "carrier" problem (clinically apparent or otherwise), plus abnormal mass movements, is likely to be of considerable "significance" in relation to incidence.

I am tempted to postulate that a rise in the incidence of this disease, whether pre-war or inter-war, is directly related to some sizable social upheaval involving exceptional movement and mixing of population, thus producing abnormal contacts. Furthermore, the rate of increased prevalence and eventual high peaks of incidence are in direct proportion to the magnitude of the upheaval and to the thoroughness of the mixing process. Such an opinion tends to be strengthened in the light of recent findings on the development of immunity against the *Acarus scabiei*. Mellanby (1944) has shown that cured scabietics have, by formation of a specific antibody against the mite, rendered themselves at least partially immune to its further encroachments. Having shown in primary scabietics that the mite populations are eventually much in excess of those developing on the persons of cured scabietics infected for a second time, he next applies this finding to the epidemiological aspect of the problem. He states that "if the incidence has been low for a number of years the majority of the population, and particularly the children, will never have been infected," and therefore on infection they will develop large mite populations, which, "because the disease is not widely known" and not self-treated sufficiently early, will be the means of stimulating an epidemic.

One feels, however, that during the inter-war periods the chronic "carrier" is likely to exert his influence only among his own limited circle of familiar contacts and working associates, many of whom must already have had the disease or, possibly, are still harbouring it. In normal times by far the greater proportion of scabies probably originates in those households where uncleanness and bad conditions are most apparent. Since a partial immunity to this disease now appears to be definite, it is most likely to be found among those living in such unsatisfactory surroundings. Conversely, the greater the degree of cleanliness of person, household, and associates, the

less likely is one to meet with the disease and the less likely are such people to have any degree of immunity. Hence, anything widely upsetting this balance will, through providing optimum conditions for abnormal contacts, cause an increased prevalence. Such an upheaval comes with war, and the consequent results have been well typified in the war of 1914-1918, and more particularly during the present war. When we remember that, in the United Kingdom, the clean and the unclean, the non-scabietic and the scabietic, the non-immune and the possibly immune have all been thrown together in their war-time work and duties (and there has been less class distinction, both civil and military, than in previous conflicts), then the consequent mixture is potentially productive of an "explosive" outburst. Many of us have been struck by the number of clean and well-to-do people who have contracted the disease. Such remarks as "Doctor, I feel so ashamed, there has never been anything like this in the household before," or "I cannot understand it at all. I always thought this disease came from dirt and we have always been so scrupulously clean in our household," are commonplace.

Mellanby (1943) writes: "The present distressingly high incidence of scabies might well have arisen if there had been no war at all; this contention is supported by the fact that the rise which coincided with the war of 1914-1918 was equally severe in neutral and belligerent countries." But can a nation which is neutral in war stand entirely aloof from all that war entails? To exercise their neutrality these countries have been placed upon a steadily increasing wartime footing for the last five or six years. This often entails a maximum mobilisation in military and industrial manpower, and thus the "social upheaval" previously referred to becomes apparent. Neither does this take into account the obligation placed upon neutrals regarding the internment of combatants or of extending charitable "sanctuary" to refugees.

Winter "Huddling"

The winter practice of "huddling" is blamed by several recent writers, and indeed by others of earlier days (e.g., McCall Anderson, 1894), for an increased prevalence in scabies at this period of the year. But confirmatory evidence should be forthcoming before such a theory is accepted. Rayer, as long ago as 1835, said: "Itch is neither an endemic nor an epidemic disease in the usual sense of these words; it is not propagated by causes peculiar to the climate, nor to the situation where it appears; it spreads by the mere effects of contact and want of cleanliness"; Naylor (1866) pointed out that there was nothing to suggest that scabies showed any excess in one month over another. Except for the extensive building programmes in the warmer months of the pre-war years, the number of domiciles, beds, and occupants would appear to remain fairly constant in winter and summer. War-time evacuation and indiscriminate "blitzing" may equally well occur during either season; and housing programmes are now non-existent. Except in those few households where the single-beds of summer are discarded for the double-beds of winter, "huddling" in winter* may not be of much import if we consider these points; remember that close and prolonged bodily contact is the surest way of transmitting the disease, and recall the statement of Erasmus Wilson (1864) that "scabies is more certainly acquired by sleeping with an infected person than in any other way" (italics mine), an opinion often endorsed (Munro, 1919; Mellanby, 1941, 1942, 1943; McCracken, 1942; Clayton, 1943). Moreover, while there is a tendency for closer bodily contact in winter, the warmer summer atmosphere would seemingly act as a counter-balance and render the skin the more receptive to the migratory and burrowing habits of the now more active mite (cf. Neumann, 1871; Munro, 1919).

* In studying the Gateshead graph (q.v.) there may be an inclination to cite the higher peaks of incidence following the December holiday periods (as opposed to those following, say, the August vacations), as confirmatory evidence in favour of the winter "huddling" theory. A word of caution must, however, be sounded, since, for the purpose of annual statistics, those cases which were still undergoing treatment at the end of each December were deleted from that monthly total and carried over to the following respective months of January and classified as new cases therein. This has had the effect of "weighting" the several months of January and "lightening" those of December; though, owing to war-time exigencies, I am not in possession of the necessary data to indicate the amounts of the respective variations.

The following further observations and facts concerning the incidence of scabies appear to the writer to be patent and relevant:

Relation to War

The relation to this war, whether prior increase is apparent or not, is undoubted, and in the former case there is at least evidence of a social upheaval in that the Armed Forces and industry must, in spite of our unprepared condition at the outbreak of hostilities, have been absorbing more and more manpower before the war. This opinion is in keeping with the gradual reduction in the unemployment figures in many parts of the country during the immediate pre-war years.

Graph I, traced from the records of the West Bromwich Public Health Department during the last 31 years, strikingly shows the greatly elevated prevalence of this disease among school children during the two most recent war periods. It is difficult to believe that this is mere coincidence. It might just as well be argued that the enormous public increase in venereal disease during the two periods in question was also cyclic and coincidental.

Further interesting points from Graph I show:

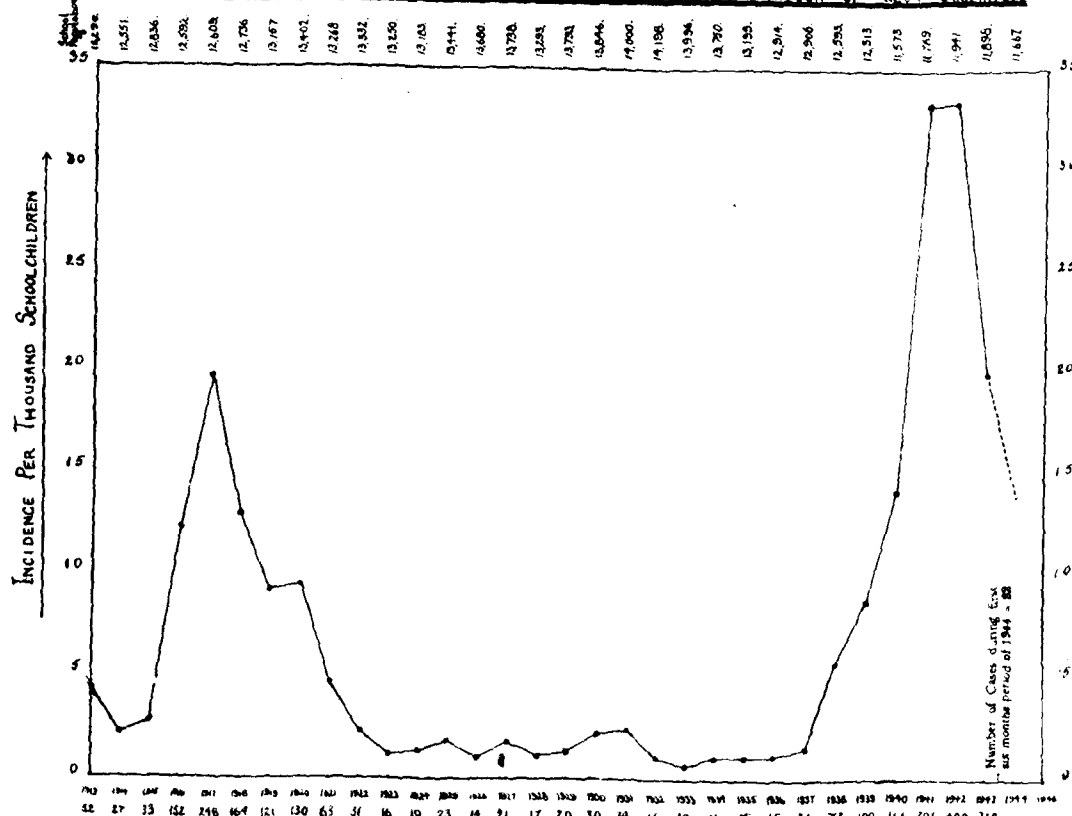
(a) That whereas during the war of 1914-18 the school population was steadily increasing in numbers, the statistical figures before and after the present world conflict show an equally steady decrease. Yet the peak incidence of the disease was 61.3% greater in the latter instance, and was so maintained during the two-year period 1941-42. (b) That during the 1919-1920 span the regular downward trend of the graph was interrupted by a slight increase in the number of cases ascertained. With regard to (a), the "cyclists" may contend that the higher comparative prevalence is to be explained either by an increased "virulence" in the disease or by a greater periodic "susceptibility" of the population to contract it (both debatable points). I suspect, however, that the greater number of people uprooted from their normal environment and involved in the mixing process of the present war effort accounts for the great disparity in the respective trends and peaks of incidence. In other words, the population "at risk" from the disease in the present conflict is much in excess of that during the war of 1914-1918. Concerning (b), one cannot say why such a break of continuity in an otherwise regular recession should have occurred. Nevertheless, I should like to suggest that the repatriative process after the 1918 November Armistice, which constituted a minor social upheaval in reverse, might not be unconnected; following which the nation gradually returned to a relatively routine domiciliary and workaday existence. It will be of interest to notice whether repatriation and the "homing" movement of all in the United Kingdom will produce a similar "microtism" in the now receding tide of incidence.

Such observations from a single graph concerning a fairly compact section of the community least likely to be directly affected by war conditions are liable to criticism. It must be remembered, however, that many mothers and sisters have either voluntarily migrated or been compulsorily directed to various branches of Civil and Military Service. Thus not only do children come in for less home care and attention to their hygienic wants, but the opportunities for acquiring the disease from their elders are enhanced.

Relation to School

Throughout the country the large proportion of school children affected is notable, but this must be largely due to

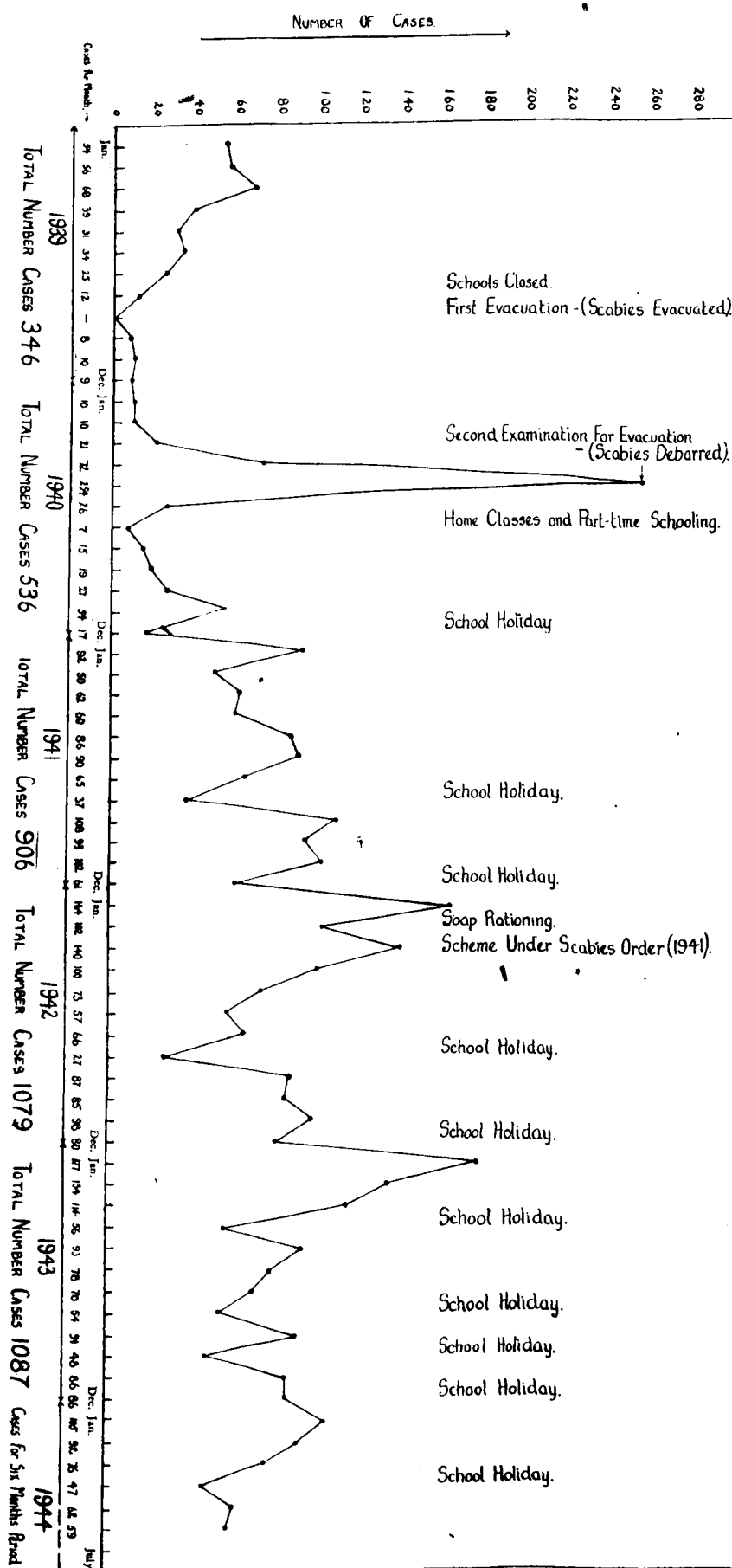
GRAPH I YEARLY INCIDENCE OF SCABIES AMONG SCHOOLCHILDREN—COUNTY BOROUGH OF WEST BROMWICH



the more adequate diagnostic facilities, e.g., in the school medical and maternity and child welfare services. For example, after the 1942 summer holidays there was a large increase in the number of scabietic school children directed to the Joint Scabies Clinic for the districts of Blaydon, Ryton, and Whickham (Co. Durham). In the course of a routine "follow-up" in their homes a large number of adult and pre-school sufferers from the complaint were discovered. More detailed data on the post-school-holiday prevalence is forthcoming from the County Borough of Gateshead, and Graph II shows the higher monthly peaks of incidence after the respective vacations.* Such a position may be accounted for in one, or all, of three ways:—

(a) Through routine school medical inspections commencing after the holidays.—Since in a largely populated administrative area only a limited proportion of children would have had routine examinations during the first month of each school term (especially with war-time deficiencies of staff so apparent), then this source could exert only a relatively minor influence on the immediate post-school-holiday incidence of the disease.

* See earlier footnote.



GRAPH II INCIDENCE OF SCABIES AMONG SCHOOLCHILDREN IN THE COUNTY BOROUGH OF GATESHEAD—JANUARY 1939 TO JUNE 1944

(b) Through cleanliness surveys beginning immediately after the holidays.—In the unlikely event of a comprehensive survey being efficiently completed within a month after each vacation, a true picture of the post-school-holiday prevalence might then be forthcoming.

(c) Through a "rush" attendance of scabietic to the school clinics directly after the holidays, during which they would not deign to attend for such "trivialities."—In Gateshead it is felt that practice (c) is primarily responsible for the greater post-holiday increase in scabies. The fact that such a custom is also apparent with minor ailments in general adds weight to this opinion.

In any case the higher peaks of incidence after the school holidays draw attention to a reservoir of domiciliary scabies among certain sections of the community even in normal times. The striking results of an intensive cleanliness survey conducted at short notice in 1940 tends to accentuate this belief.

In September, 1939, the schools were closed because of the prospect of aerial attack, and immediate attention was focused upon a preliminary evacuation of school children from the County Borough, irrespective of any special "eliminating" medical examination for this disease. The resultant negative incidence during September is shown in Graph II. The thorough cleanliness survey in May, 1940, however, when a second evacuation occurred, depicts a different state of affairs, in which scabietics were precluded from the scheme until such time as they were treated and certified as clear of the disease.

Friedman (1941) quotes Van Leent as saying of the East Indies that "scabies is so widespread among the indigent that a great many individuals pay no attention to it." In the United Kingdom, however, where medical advice and treatment are available to all who care to make use of them (not excluding the needy), "indolence" rather than "indigence" is more likely to be responsible for the persistence of this easily curable disease, especially in peace-time.

Other points of interest from Graph II show: (a) A meagre number of scabietic cases attending the clinic during that period when, following upon the primary evacuation, home classes and part-time schooling were initiated. (b) A somewhat erratic trend in which the higher peaks of incidence were reached during the earlier months of 1942, when the Soap Rationing Regulations and the provisions of the Scabies Order (1941) were introduced into the County Borough. (c) That the highest monthly incidence (exclusive of September, 1939) occurred in January, 1943, and that the greatest annual prevalence was also in 1943—a most interesting point in view of the extraordinary decline in the prevalence of the disease throughout the Administrative County of Durham during the same year. (d) A decrease of 212 cases during the first six months period of 1944 as compared with those discovered during the corresponding period of 1943.

It must be remembered that the irregular yet upward trend of the graph subsequent to the 1940 evacuation is possibly influenced in part by the sporadic return to their Gateshead homes and schools of a portion of the evacuees.

Relation to Industry

The number of cases acquired from war-time industry is manifest and has been a bigger factor in favouring the conditions of spread than has generally been realised. We have had in this country a bigger standing army, of both sexes, than at any time in our history, and this has not been possible without diluting industry, and labour generally, with a very high proportion of women, both married and single—hence the hygienic

neglect of many school and pre-school children. In addition, there is a varied Allied Army—a further potential for an increase in the prevalence of the disease.

Too often while visiting homes on Tyneside did one discover girls infected from local industrial contacts, and likewise many others home on leave from factories in the South and Midlands. It was not uncommon to find that for company's sake they had been sleeping with girl friends, frequently from their own home district. On several occasions mothers from clean and respectable households expressed the opinion that their daughters had contracted the disease through industrial employment: "What can you expect," they say, "when the majority of workers in the building have the disease?" Such a statement is exaggerated, but there is strong circumstantial evidence of excessive scabies in industry: there has been a singular lack of statistical data in this direction since the war began. In this connection I would quote the following passage on scabies from the *Medical Times and Gazette* of 1885: "It is seen for the most part in children who get infected at school, and amongst mechanics, with whom it is quite common for two young men to share a room together besides coming into frequent mutual contact in the workshop."

Generally speaking, then, the activities and propagation of the itch mite are favoured by the crowded ranks of industry, the "shuttling" of labour (and others) to and from various parts of the country in overcrowded transport; and the overcrowding of workers in billets.

Furthermore, particularly in the earlier war years, the treatment of scabies in factory workers was difficult because of long hours of work and continual variation in shifts. It is comparatively easy to exclude a child with scabies from school until cured, but not a factory worker.

Relation to Domicile

A degree of insidious infection lies concealed in a certain proportion of the adult population who are content to "itch" and be a menace to others rather than be subjected to "intolerable" exposure and treatment, or let it be known that they have the disease. This must partly account for the much higher apparent incidence of scabies among school children, and in the Allied Forces for whom, generally speaking, adequate facilities are available for its detection.

Relation to Other Items

The Civil Defence and Home Guard Services, with their communal arrangements for sleeping, feeding, working and camping often live in conditions favouring infection. On two occasions scabies was found among the personnel of First-Aid Party Depots.

Evacuation must also play a part in the plan just as the shortage of and deterioration in housing must occupy a still more important role. Whether the recent "doodle-bomb" evacuation of civilians from the London area will produce a minor recrudescence of the disease in certain of the more heavily committed reception districts is problematical. In view of past experience, however, cleanliness surveys, together with prompt and energetic treatment where necessary, may have been the means of preventing this.

"Venereal spread" is an expression which, applied to scabies, has been much in evidence since the war began, and should not, as Munro has pointed out of Prof. Darier's term "venereal origin," be accepted too literally. In civilian life it is not uncommon to find abdominal scabies in mature women with little else of skin infection to show on the remainder of their bodies. Belbin (1942) drew attention to a similar state of affairs in soldiers. The close contact afforded by sexual intercourse is ideal for the transmission of scabies, but the disease is obviously *not* venereal. Nevertheless, from the epidemiological aspect, the two types of disease have much in common, since, direct bodily contagion is predominant in both, and the social "earthquake" which follows in the wake of war is primarily responsible for the increased prevalence in either instance.

Bensted-Smith (1942) rightly drew attention to a fairly frequent source of infection—namely, the dance hall. "I am surprised," he states, "by the number of cases in clean homes which are possibly contracted in this way. It probably accounts also for a number of those infected on leave." The warm and fairly prolonged hand-to-hand contact while dancing would appear to present ideal conditions for the peregrinations of the itch-mite, and I have seen several examples seemingly contracted in this way. In such a category may conveniently be included those cases acquired from the rife and obtrusive war-time practice of "picture-hall petting."

The Declining Incidence

The reasons for the recent abrupt recession of the disease in this country are, to me, much less apparent, but I would tentatively suggest the following as likely to have influenced this trend:—

(a) On the attainment of our maximum mobilization and peak productive efforts, probably during the year 1942, a point of "saturation" was reached whereby the population were mixed to such an extent as to produce the greatest number of fresh contacts and, consequently, scabietic cases.

(b) At such a point of "saturation" the position would tend to become stabilised for a period, and thereafter the incidence of the disease would diminish partly by energetic treatment; partly, perhaps, by the immunising process which Mellanby (1944) has described; and partly by the drafting abroad of Allied troops, this providing fewer opportunities of contact for the now smaller remaining population.

The Services are very apt to place the onus for their contracting the disease upon the civilian population. Whether this be the rule or not, the itch-mite *remains* no respecter of person and, once having acquired the disease, the Serviceman, on his pleasure-seeking furlough especially, is just as liable to disseminate the disease as the civilian.

Summary and Conclusion

The historical and geographical incidence of scabies is briefly illustrated. The increased war-time prevalence of the disease is reviewed, and the probable causative factors are indicated and discussed. Statistical and graphical evidence is recorded to show that the incidence of the disease is now declining rapidly, and certain suggestions are propounded as likely to have influenced this trend. Various other points relating to the spread of the disease are also surveyed.

It is suggested that in seeking a solution to the recent war-time incidence of scabies it is futile for statisticians and epidemiologists to look for any one specific cause. The picture must be viewed in perspective, and it will be seen that those conditions which produce mixing and "herding" of entire populations under abnormal social conditions (especially intimate), as in the history of wars and armies throughout the centuries, are predominant. The uprooting and diffusion of the community, scabietic and non-scabietic, into their many war-time duties and employments; the often inadequate facilities for early diagnosis and treatment; the failure of many misguided adults to seek treatment for themselves and their families; the inevitable deficiencies in medical and orderly staffs consequent upon war-time conditions; the recent military and industrial upheaval and related shattering of home life and routine for adults and children alike—all these, and more, are contributory factors, and any attempt to effect an appreciable reduction in such a prevalence must necessarily take them into account.

In peace-time scabies is essentially a family affliction and tends to be limited, but in war-time the nation becomes the "family" and scabies tends to be unlimited.

My grateful thanks are due to Drs. James Grant and W. S. Walton, Medical Officers of Health, respectively, of the County Boroughs of Gateshead and West Bromwich, for permitting me the use of much statistical evidence included in this paper; also for various associated comments in personal communications. To Dr. Ian McCracken, Medical Officer of Health of Durham County, I am indebted for statistical items kindly extracted from several of his Annual Reports.

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The supply position of quinidine is becoming increasingly serious both here and in the U.S.A. For some time past, it has been impossible to meet all the demands and total stocks are insufficient to meet the anticipated requirements for 1945, while the possibilities of adding to the stocks are remote. It is, therefore, imperative that quinidine should be used with the strictest economy. This can be done first by prescribing it only where there is need to restore the normal heart rhythm in auricular fibrillation, auricular flutter and paroxysmal tachycardia. Secondly, the dosage should be restricted to the minimum necessary to control the case. Information tends to show that many patients take the drug over too long periods and in unnecessarily large doses, say two or three grains. The supply position of this drug is so difficult that the co-operation of all practitioners in economy in its use is vitally necessary, otherwise the welfare of many patients must undoubtedly suffer.

COUNTY COUNCIL OF ESSEX AND URBAN DISTRICT COUNCIL OF THURROCK

Applications are invited from duly qualified medical practitioners, possessing the Diploma in Public Health, for the appointment of two temporary Assistant County Medical Officers and Assistant Medical Officers of Health. The salary attaching to the appointments will be at the rate of £500 a year, together with war bonus, rising, subject to satisfactory service, by annual increments of £25 to £700 a year, but the commencing salary may be varied having regard to experience and capabilities. Forms of application may be obtained from the Clerk of the County Council, to whom they should be returned completed, accompanied by copies of three recent testimonials, immediately. Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN,
Clerk of the County Council.
A. E. POOLE,
Clerk to the Urban District
Council of Thurrock.

County Hall, Chelmsford.
December 22nd, 1944.

THE FUTURE OF THE SCHOOL MEDICAL OFFICER*

By F. J. G. LISHMAN,

Deputy County Medical Officer, Devonshire

[The first section of this paper dealt with the main provisions of medical interest in the Education Bill before it became an Act, these provisions being included in Section 31-2 and 46-52 of the Bill. Since in the Act itself several of the points raised in the paper no longer apply, modifications having been made, it has been decided to reproduce here only the second part of Dr. Lishman's paper, which concerns the part which the School Medical Officer might play in relation to a National Health Service in the future.]

From the standpoint of the future of the school medical officer, perhaps the greatest interest in the provisions of the Education Bill lies in the first and third, that is Subsections (1) and (3) of Section 46 (now Section 48 in the Act), in both of which an enormous extension of the school medical service is forecasted. Especially interesting is the phrase "either under this Act or otherwise" in Subsection (3) in connection with the arrangements for securing free and comprehensive medical treatment; for this phrase suggests that there is to be another Act under which the provision may be made.

This leads me to the National Health Service White Paper, which appeared two months after the publication of the Education Bill. The White Paper proposes a free and comprehensive medical service for the whole nation, and suggests that some or all treatment previously undertaken by the school medical service should in future be undertaken by the doctors and organisation of the N.H.S. The continuation of a mutilated school medical service working under the Education authorities, and concerned chiefly with so-called "inspection," is, however, envisaged. This threatened bisection of the school medical service, in which the health educational and diagnostic aspects will be divorced from the treatment side, has given rise to great misgivings among school medical and assistant medical officers, not only from the standpoint of their own future, but from that of the welfare of the children. But would such a divorce be a bad thing if it simultaneously removed what would otherwise be a serious obstacle (splitting the care of the family) to the success of a National Health Service, which would, besides being in the interests of the public, absorb a certain number of medical personnel from the existing school medical service? Such a rearrangement, indeed, seems to me to open the door to the development of an entirely new type of school medical service, covering the child from nursery age to late adolescence—let us call it a child health service—in which the medical personnel would become real specialists, not only in their own eyes, as at present, but also in those of the medical and teaching professions as a whole.

School Medical Specialist

In compensation for the loss of "treatment" work, it is suggested that the school medical specialist of the future should greatly develop his function as a teacher of health, a function which, although beginning to be exercised by a few school medical officers, is still in the napkin stage in the school medical service generally, with the ordinary teachers holding the medical baby. (Here one may ask, is the treatment of minor ailments at school clinics, supplemented perhaps by the operation of special clinics such as nutrition and actinotherapy clinics, really of such interest to the doctor as compared with the creative, educational work he can carry out in the school during the so-called "inspections" and in the class-room or discussion group, especially when such "treatment" work, as environment and social conditions improve can be expected greatly to diminish?)

The school medical specialist should be trained in educational as well as medical methods and be able to play his part

* Paper read to West of England Branch of Society.

as a colleague of the ordinary teachers, taking over from them for formal class teaching such subjects as physiology, personal hygiene, sex education, mother- and father-craft, and possibly even biology and cooking. The ordinary medical curriculum would probably have to be contracted for intending school medical specialists, some subjects, such as medical jurisprudence and practical surgery and gynaecology, being condensed or omitted, to avoid extending the period of training of the school medical specialist beyond that of an ordinary doctor. The outlook of such an officer, when conducting an "inspection" would be different from that of his counterpart of to-day, who looks principally for disease, defects, and slight deviations from what he considers should be normal health, using "normal" in the sense of "optimum." The future medical officer would, however, not confuse "normal" with "optimum," but would be constantly striving to find out some way in which the physique, intelligence, beauty and happiness of each child, and of the mass of children, even those who according to current standards are already in what appears to be perfect health, can be improved. This is what I call the "positive health outlook," in which the optimum is never static but constantly advancing.

"Inspection" and "Treatment"

It may be argued—why not press for the transfer of medical "inspection" as well as "treatment" to the National Health Service? Such an arrangement would certainly more closely associate "diagnosis," as envisaged at present, with "treatment," but there are points which make such an arrangement undesirable or impracticable, at least regarding children of school or nursery school age. Up to those ages it would certainly be practicable, and possibly desirable, that periodical medical examination, which is what is meant by "inspection," should be carried out at child-welfare centres, or the "health centres" which will replace the present centres, and the examinations carried out by the new type of family general practitioner envisaged in the Health White Paper. There are many doctors, however, who feel strongly that the supervision of the health of even pre-nursery-school children should be concentrated in the hands of child health specialists. Be that as it may, the arguments for retaining specialists for periodical examination of school and nursery school children are stronger.

First, to conduct as at present the periodical (and other) examinations in the schools would obviously be administratively economic and convenient, since an unbroken succession of children can be seen with a minimum of disturbance of the child's education (it being assumed it is impracticable to carry out all periodical examinations in the holidays only). If it be agreed that the examinations should be done in school, it follows that they must be done by a special doctor, since it would be confusing and impracticable for each family doctor to make separate arrangements about the school medical inspection of the children of each family on his books. Secondly, when the examinations are done in the school the examiner has the advantage of seeing the children within their own educational environment, and in co-operation with the teacher of assessing the child's response to and behaviour in that environment. This point—of co-operation between medical officer and teacher—is of fundamental importance, since to obtain a satisfactory three-dimensional picture of the child the teacher's opinion is as essential as that of the mother and the doctor. It is clear that a single medical officer will get to know the teachers and the minutiae of the school environment and curriculum much more intimately than could a number of different doctors spending a short time at the school.

Assuming that these arrangements are accepted, and that the periodical medical examinations of children of school and nursery school age should be conducted by special medical officers, who will not, however, be responsible for carrying out any remedial "treatment," then the field is ready for the new venture already suggested—that these special doctors should also take on new duties as health teachers.

A further suggestion is now made: In order to maintain contact with the remedial side, and to enable the specialist school medical officers to check the "failure" results of their teaching and "point the moral" to other children,

they should be given full right of access not only to the health centres or to the surgeries of National Health Service doctors not yet working in health centres, but also to children's hospital beds. In addition to having right of access, they should have the right to demand being consulted with regard to any school child passing to the health centre or hospital—consulted, that is, from the standpoint of the child's background and personality, rather than on the clinical condition.

Health Centre

As regards the health centres, I suggest: (1) that each centre should be required to appoint the school medical officers working in the area served by the centre as liaison officers; (2) that each National Health Service family doctor should arrange to see all school children who need centre treatment at certain specified hours, perhaps two or three sessions a week with the times for the various National Health Service doctors staggered by an hour or so; (3) that the "liaison officer" should attend all such "school children's sessions," passing on from one National Health Service doctor to another, in successive consultation. With the establishment of such a liaison, on the one hand the school staff would benefit by having exact knowledge of all the facilities at the health centre, and a close insight into the special interests and qualities of the various members of its medical, dental, nursing, and auxiliary staff; on the other hand, the health centre would benefit by obtaining more complete information, and by the ability both to pass on direct verbal advice to the school staff concerning the school management and care of a delicate child, and to make direct suggestions with regard to health education in the schools; while both sides would gain by the ability to keep linked records.

A secondary benefit which should result from the liaison system which I have outlined would be an improvement in the status of the school medical staff, as compared with the present, when clinical school medical officers are frequently looked down upon by the general practitioners, who are often ignorant of their work and full functions. With the expansion of the school medical officer's work to include teaching (that is real "doctoring") on the one hand, and consultation with the National Health Service on the other, the true value and status of the specialist school medical officer could scarcely fail to be recognised.

BOOK REVIEW

Industrial Medicine. Edited by Sir HUMPHRY ROLLESTON and ALAN A. MONCRIEFF. *The Practitioner Handbooks.* London: Eyre & Spottiswoode. 1944. Pp. 202. Price 16s.

This handbook is a collection of about 18 articles, each 2,000 or 3,000 words long. Seven of them were previously published in *The Practitioner* for December, 1942. The fact that some of the contributions are good cannot in itself justify the title, which is misleading: industrial medicine is a much larger subject than this collection of articles suggests.

The article on industrial dermatoses is excellent and of practical value to a doctor or nurse in industry, particularly because the preventive measures are well stressed. In Chapter 5, on miners' nystagmus, it is asserted that "defective illumination is generally accepted as the real cause . . ." A passing reference to this fact in the chapter on lighting would have sufficed; the long dissertation on the "interference with the reflex fixation arc" is out of place. A chapter devoted to back strain is, for the most part, an academic discussion on the differential diagnosis. It would have been better to have a chapter on the common cold and its prevention, or on the care of feet, or some other common condition, such as eye injuries and their prevention. Three thousand words on malingering also seems rather much. The prevention of accidents receives no attention, and the health problems of women workers is not discussed. An introductory article reviewing the subject as a whole would have been helpful. The book has too many gaps to make it worth 16s. to either students or practitioners.

CORRESPONDENCE

PROBLEM FAMILIES

To the Editor of PUBLIC HEALTH

SIR,—The interesting article by Dr. R. C. Wofinden, M.O.H. of Rotherham, in the September issue of PUBLIC HEALTH must have caused many of us to reflect on the problem families who are reproducing their kind. I do think the time has come for us to plan some more constructive measure as a last resort than the present one of separating the child from the natural family. Experience over many years has led most thinking workers to admit that the institution is not the solution to the broken home. Foster parents may be excellent, but here one finds that people of integrity with good standards of conduct and hygiene—and these are the traits a local authority must look for in foster parents—often fail to have the intuitive sympathy which forms the strongest bond between the natural parent and his child. Evacuation showed us people keen and willing to help, but they failed miserably in understanding the child from the problem family.

We are all agreed that many of the parents are dirty, lazy, and ineffective, and that given all that the planners of the new Britain hope to give—namely, decent housing, a living wage, children's allowances, etc.—the parents would fail because of their own failure to co-operate in the social effort. We ought to consider the passing of legislation which would make it possible for parents to be removed with their children by order of the Court, and to be cared for under skilled supervision for a period of time, after which they should be able to return to their homes.

There would appear to be two methods of tackling this. The most thorough would be that of setting up experimental colonies from which the father could go to his work, and for this purpose some of the well-constructed army camps might be adapted. This would be a colony analogous to that of Papworth for the tuberculous. Something less ambitious, however, might be a useful start—namely, that interested local authorities should provide three or four houses, preferably together, to which the families could be removed and where they would be under skilled supervision. In both instances the secret of success would lie in the opportunity which would thus be provided for training the housewife, and to some extent the father, in parent-craft and housecraft. I imagine that a small group of houses could be supervised in this way by one trained social worker along the lines of Octavia Hill's work. Such a step would, of course, not be a practicable proposition where the I.Q. of the mother was on the low side, and before putting it into operation mental testing would be necessary.

There would no doubt be a great number of snags about such a scheme, but it would at least make an attempt to circumvent the grave injustice which is at present being done to children and to society in all cases where children are removed from parents (who are left to their own devices), and it would fit in very much more with modern ideas of "rehabilitation," for it should be possible to restore families to the community as complete and effective units. In some cases might we not even turn our liabilities into assets. Dr. Wofinden's letter, I hope, will stimulate others to give their views on this vital problem.

I am, etc.,
FRASER BROCKINGTON,
County Medical Officer of Health.

Warwick.

POST-WAR SANITARY ADMINISTRATION

To the Editor of PUBLIC HEALTH

SIR,—The Sanitary Inspectors' Association is on the war-path again. In its memorandum it lays forth the desirata for its members to control. There are 14 under (a) general sanitation; seven under (b) housing; five under (c) food inspection, and six under (d) miscellaneous subjects. It gives no reason why post-war sanitary matters should differ from peace-time sanitation. Neither does it state why the control of these functions should be taken away from the medical officers of health. Furthermore, it makes no mention of medical officers of health having a say in these functions in its proposed board of reference. One could take up a lot of space in discussing each of the tabulated items, but any medical officer of health who has the public interest at heart (and not merely the sanitary inspectors) must strongly object to the memorandum as published. Here we have a small group of men constituting a board which represents only a minority of the population (it can only boast of 4,000 members) laying down dogmatically what sanitary supervision there shall be under its aegis. And of course the medical profession must not be mentioned nor consulted. It can be asserted that probably not 50% of its members either desire or are qualified to control adequately 50% of its programme. As one highly interested in the whole of the items mentioned, I must not only protest at this absurdity but say definitely shall oppose it with vigour.

I am, etc.,
"PRO BONO PUBLICO."

OBITUARY

E. V. SUCKLING, M.B., B.S., D.P.H.

We regret to record the sudden death at Gidea Park on November 16th, in his 52nd year, of Dr. E. V. Suckling, late Bacteriologist to the Essex County Council and joint author of *Thresh, Beale, and Suckling's Examination of Waters and Water Supplies*. He was a Fellow of the Society of Medical Officers of Health.

Ernest Victor Suckling was born in Chelmsford and educated at King Edward VI Grammar School in that town. Between 1910 and 1914, while continuing his studies at the Sir John Cass Technical Institute, he was a student-assistant in the laboratory of Dr. J. C. Thresh. Throughout the war of 1914-18 he was attached to mobile laboratories with the second, third, and fourth armies in France. He was mentioned in despatches and promoted Lieutenant, R.A.M.C., in the field, receiving his commission while as yet unqualified in medicine—a procedure unusual at that time. He was finally Officer in Charge of No. 4 Analytical Laboratory, British Army of Occupation in Germany. On demobilisation he continued his studies at East London College, at the London Hospital Medical School, and at University College, London, qualifying M.R.C.S., L.R.C.P. in 1924 (with first prize for Medicine in this year), and taking the M.B., B.S. of London University in 1925. He took the D.P.H. in 1927. With Dr. J. C. Thresh and Dr. Beale he entered into partnership as a consultant, bacteriologist, and water examiner to county and local authorities, water boards, and statutory water companies. He was Consultant Water Bacteriologist and Analyst to the Household of H.M. the King, and acted as consultant to various Government departments. Among his appointments were those of bacteriologist to the Essex C.C., and examiner in water supply and the treatment of sewage and trade effluents to the Royal Institute of Chemistry, a body of which he was a Fellow. He was the principal figure concerned with the investigation and control of the Sutton waterborne epidemic and the Croydon typhoid epidemic, and in recognition of this work was elected a Fellow of the Royal Sanitary Institute.

In 1941 his laboratories were completely destroyed. The services and work of the organisation were, however, carried on without sensible interruption, and further, in spite of the loss of much valuable manuscript, the preparation of the fifth edition of *The Examination of Waters and Water Supplies* was completed in January, 1943.

J. J. PATERSON, M.D., D.P.H.

Dr. J. J. Paterson, late M.O.H. for East Berkshire, died from an illness in Italy on October 24th, after being appointed to U.N.R.R.A. in June.

James Jenkins Paterson won a senior science scholarship from Cardiff Medical School to St. Bartholomew's Hospital, and graduated B.Sc. Lond. in 1903. He qualified M.R.C.S., L.R.C.P. in 1906, took the M.B., B.S. in 1908, and proceeded to the M.D. in State Medicine in 1911. At Bart.'s he was for a time junior demonstrator in physiology. He entered the public health service as assistant M.O. to the Croydon Borough Hospital, and later became assistant M.O.H. to the county borough of St. Helens. In 1911 he became M.O.H. for the East Berks United Sanitary Districts, school medical officer for the borough of Maidenhead, and superintendent of the infectious diseases hospital. At the Annual Meeting of the B.M.A. in 1922 Dr. Paterson served as Honorary Secretary of the Section of Public Health. His untiring work as M.O.H. for East Berkshire had earned him a quiet retirement, but when medical men were required by U.N.R.R.A. he volunteered to work on Balkan relief. He spent a hard summer in refugee camps in the Middle East, and just as he was due to leave Italy for Yugoslavia he collapsed while at work and died. Our sympathy is extended to his widow in her sad loss.

W. M. ASH, O.B.E., M.B., B.S., D.P.H.

We regret to record the death on November 9th at the early age of 55 of Dr. W. M. Ash, M.O.H. for Derbyshire, and an ex-president of the Midland Branch of the Society.

Walter Martin Ash received his medical education at the London Hospital and also in Manchester and Edinburgh. He qualified M.B., B.S. London in 1912, with honours in anatomy and physiology. He received the D.P.H. in 1920, and the F.R.C.S. in Edinburgh in 1923.

Dr. Ash began his medical career at the London Hospital, where he was for some time on the resident staff, holding the posts of senior house-surgeon, resident anaesthetist, senior clinical assistant in medicine and surgery to the out-patients' department, and aural house-surgeon. Throughout the war of 1914-18 he was a surgeon in the Royal Navy, serving at the R.N. Hospital, South Queensferry, and later becoming surgeon-in-charge in H.M.S. *Patia* and H.M.S. *Mantua* of the Tenth Cruiser Squadron. He also served for a time as senior medical officer on the Naval Demobilisation Board, Dundee. On leaving the Navy he took up public health work, and in 1919 was appointed Assistant County M.O.H. and School M.O. for Lancashire. Four years later he became Deputy M.O.H., Deputy School M.O., and Deputy Administrative Tuberculosis Officer for Middlesex. In 1925 he was appointed County M.O. for Derbyshire, a post which

he held until his death. His work on the incidence and treatment of goitre and his interest in the extension of the midwifery service and in the care of child health reflected his enthusiasm and his advanced outlook, his annual reports on the county health being quoted in many quarters. Well before the present war broke out he had plans to provide for the treatment of air-raid casualties, and in October, 1938, he was one of the speakers in a series of broadcast talks called "A.R.P. and You." For work which was described by a high official as "really magnificent," he was last year awarded the O.B.E.

Dr. Ash was an ex-president of the Association of County Medical Officers. He was a Freemason and a Past-Master of his Lodge. He leaves a widow, to whom sympathy in her loss is extended. His death in the prime of life has deprived Derbyshire of a notable public servant, kindly, loyal, and untiring in his work.

NORMAN J. SINCLAIR, M.B., CH.B., D.P.H.

We regret to record the death on November 18th of Dr. N. J. Sinclair, Medical Officer of Health for the County of Angus since 1909.

Norman James Sinclair received his medical education at Aberdeen University. After qualifying M.B., Ch.B. in 1897 he went into private practice in Brechin. He took the D.P.H. in 1900, and in 1909 was appointed C.M.O. for Angus. Since 1929 he has been an Honorary Sheriff-Substitute of the county, and he was a Justice of the Peace. His expert knowledge of housing enabled him to give valuable guidance on the subject to the County Council. He is survived by a widow and three sons, the youngest being a Major in the R.A.M.C. in Australia.

SOCIETY OF MEDICAL OFFICERS OF HEALTH COUNCIL MEETING

A meeting of the Council was held at the London School of Hygiene on September 29th, 1944, with the President (Dr. R. H. H. Jolly) in the chair.

There were present Drs. Cyril Banks, Malcolm Barker, G. F. Bramley, W. C. V. Brothwood, G. F. Buchan, J. J. Buchan, G. Lissant Cox, Sir Allen Daley, I. G. Davies, Jas. Fenton, D. H. Geffen, J. M. Gibson, F. Hall, A. S. Hebblethwaite, C. Herington, K. Hirst, J. W. Hunter, Sir Wilson Jameson, Prof. J. J. Jervis, Drs. G. V. T. McMichael, A. Massey, A. A. E. Newth, Prof. R. H. Parry, Drs. E. V. Saunders-Jacobs, J. A. Scott, J. A. Stirling, J. A. Struthers, Mr. A. Gordon Taylor and Dr. F. T. H. Wood.

Apologies for absence were received from Prof. R. M. F. Picken, Drs. Vynne Borland, J. A. Charles, Jas. Ferguson, F. Gray, E. A. Gregg, T. Orr, H. Paul, J. E. Spence, McKim Thomas and H. G. Trayer.

The minutes of the last meeting as reported in PUBLIC HEALTH, July, 1944, p. 116, were approved and signed. The report of the General Purposes Committee (September 8th, 1944) was approved and adopted.

The White Paper.—The Council gave further consideration to the White Paper, and in connection therewith took into consideration the resolutions and observations of Groups and Branches together with memoranda from the County Borough, Maternity and Child Welfare, Tuberculosis, and Fever Groups, and Dr. F. Hall, County M.O.H. for Lancashire. The Council also had before it a report by Dr. G. F. Buchan, the Chairman of the Medical Planning Committee of the Society. After discussion the report of the Chairman of the Medical Planning Committee of the Society was adopted with the following amendments: *Omission*: Para. 3 (1) The words "of various Government Departments." *Addition* to the end of Para. 4 (a) of the words "as for instance whether the Medical Officer of Health of the Local Authority had an official relationship to the Joint Authority." The Council also decided that the report should be printed in booklet form and circulated as in the case of their previous report on the White Paper.

The Scale of Salaries.—The following report was submitted by the chairman of the Salaries Committee (Dr. A. Massey):—

There is a considerable amount of feeling among members of the Society—notably among assistant medical officers of health—on the salaries question. It is thought, therefore, that the Council of the Society will wish at this juncture to have a statement from the Salaries Committee on this matter. The Salaries Committee is at present actively engaged in considering the problem. Their information indicates that the existing Askwith Scale is quite inadequate in the light of present conditions, and that early action is called for in the interests of members. At the meetings already held, possible measures have been considered under two headings—viz. (a) an immediate request for an all-round interim 20% increase in salaries, and (b) a request

for a detailed revision of the Askwith Scale. At first there was a majority of the Committee in favour of a request for a simple 20% interim increase as the first step to be taken. But the evidence which subsequently came before us—notably the fact that the Associations of Local Authorities have recently turned down the B.M.A. request for a 20% increase in salaries of part-time medical officers employed by L.A.s—was a contra-indication. At the last meeting of the Committee on September 8th it was therefore decided to drop the idea of the 20% increase, and to proceed as quickly as possible to prepare a revised Askwith Scale and the case for its presentation. At the next meeting of the Committee in early October, there are to be considered memoranda by Dr. Ramsay (of the Medical Superintendent's Society) and by me. Dr. Ramsay's memorandum will set out suggested new scales covering categories I and IV of the Askwith Memorandum, and my report will deal with categories II, III, V, VI and VII.

It should thus be possible in the near future to send out suggested revised scales to Branches and Groups for their consideration.

Meanwhile consideration is being given to any immediate steps which can be recommended by the Council. The report was approved and adopted.

Elections to Council.—Elections to the Council for the session 1944-45 were as follows: UNDER ARTICLE 19 (d): Drs. J. J. Buchan, J. Ferguson, T. Orr, R. H. Parry, F. T. H. Wood and J. Fenton, with Drs. N. D. Begg, Katherine Hirst and H. G. Trayer nominated by Inter-Group Committee. UNDER ARTICLE 19 (f): Sir Allen Daley, Sir George Elliston, Sir Wilson Jameson, and Dr. J. A. Charles.

Draft Regulations under Education Act, 1944.—Dr. G. F. Buchan and Dr. J. W. Hunter reported on their discussion with representatives of the Ministry of Education concerning Draft Regulations under Sections 33 (1) (3) and (4) of the Education Act, 1944.

Representation of the Society.—Dr. Katherine Hirst and Dr. Hamilton Hogben were elected to fill vacancies on the Central Council for Health Education as representatives of the Society. Prof. J. Johnstone Jervis was elected to represent the Society on the Central Medical War Committee in place of Dr. Gordon Lilico, now serving with U.N.R.R.A.

The Council then adjourned.

NORTH-WESTERN BRANCH

President: DR. J. E. SPENCE (M.O.H., Eccles).
Hon. Secretary: DR. W. C. V. BROTHWOOD (Deputy M.O.H., Lancashire).

A meeting of the Branch was held in Blackburn on October 6. There were present the President and 40 members and visitors. The Branch was given a cordial welcome by the Mayor of Blackburn, who occupied the chair at the opening of the meeting. On assuming the chair, the president thanked the Mayor for his welcome and hospitality. The minutes of the last meeting were taken as read and signed.

A letter from Dr. W. C. V. Brothwood was submitted resigning the office of Hon. Secretary owing to his appointment with UNRRA. The resignation was accepted with regret and appreciation for his excellent services as Secretary during the past two years. It was agreed that Dr. J. E. Spence be appointed Hon. Secretary.

Dr. V. T. Thierens was then inducted as President. A vote of thanks was accorded to the retiring President, Dr. J. E. Spence. Dr. V. T. Thierens delivered his presidential address, "Whither?", in which he gave an interesting outline of the future developments of the public health service. A vote of thanks for this address was carried with acclamation.

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EDITORIAL

Dental Health

"The state of the dental health of our population is bad and its effect on their general health is bad." This is the conclusion of the Inter-Departmental Committee on Dentistry in an interim report to the Minister of Health and the Secretary of State for Scotland.* The Committee, of which Lord Teviot is Chairman, unanimously recommend: (1) A comprehensive dental practitioner service to form an integral part of, and to operate simultaneously with, the Government's National Health Service. (2) A general dental practitioner service broadly analogous in principle and structure to the proposed general medical practitioner service of the National Health Service. Dental health centres on experimental lines, either separate or, preferably, as part of general health centres, should be set up in suitable areas; but there should be no compulsion either on dentists to work in them or upon patients to attend for treatment at them. (3) A special effort to improve the teeth of expectant and nursing mothers, children and adolescents.

The Report states that among Army and A.T.S. recruits 90% of the men and 86% of the women needed dental treatment on enlistment. A sample survey of five-year-old children in Cambridge disclosed that only 9.1% of those examined had naturally sound teeth. On the average, each child had over four decayed teeth. Of a group of 10,000 five-year-old Scottish children examined between 1941 and 1943, 1,000 only were found free from caries, and 7,000 teeth were decayed or missing—seven out of each child's 20 teeth on average, about five of these seven being molars. (These were temporary teeth.) Of 8,700 Scottish children between six and 13 years of age examined in the same period, it was found that the percentage of sound "first permanent molars" dropped steadily from 82% at age six to 20% at age 13, at which age 27% of these molars were carious but saveable, 20% carious and unsaveable, 25% lost, and only 8% filled. The experience is quoted of an Approved Society which during one year found that, of young people between the ages of 16 and 19 who applied for treatment, no less than 12.2% needed full upper and lower dentures. The same is found among adults—e.g., the expectant mothers, of whom the Committee say, "the harm that oral disease can do both to mother and child is well known." Roughly two-thirds of the insured population—between 13,000,000 and 14,000,000 people—are entitled to dental benefit, but only 800,000, less than 7% of these, claim it on the average each year. It is common experience that people do not resort to treatment until a stage when the teeth are unsaveable, and often there is gross oral sepsis.

* Cmd. 6565, H.M.S.O., York House, Kingsway, London, W.C.2. Price 6d. Post free, 7d.

The Committee recommend that measures to stimulate the recruitment of dentists should include every possible step to encourage suitable ex-Service men and women to enter dentistry; and dental teachers should be released from the Armed Forces at the earliest possible moment. Commenting that the public is "ill-educated and apathetic" mainly because of "a natural fear of pain and lack of any real understanding of the importance of dental health," the Committee recommend that there should be more dental health education, dealing with questions of diet and dental hygiene as well as stressing the need for regular inspection and treatment. Dental hygiene should form part of school routine. Full use should be made of expert dental opinion in the planning and administration of the public service, both centrally and locally; and the body with whom practitioners in any general dental practitioner service are in contract should be a dental body. The "general" service should not be regarded as a substitute for the school dental service and the dental arrangements made by maternity and child welfare authorities. These "special" services should be strengthened and improved by all practicable means—"they must form the sharpest point of attack of the dental force of the country upon dental disease." A Chief Dental Officer should be appointed by all local authorities having responsibilities for the dental health of the expectant and nursing mothers, children, and adolescents; and these officers should have direct access to the appropriate committees of the Council.

There are at present 15,192 dentists on the Register, the total for Great Britain being 14,459. Owing, however, to the weighting of the higher age-groups at present on the Register there will in the next few years be a rapid loss due to retirement. The average annual entry rate to the Register in recent pre-war years was about 340. To-day even the student-entry rate has fallen to below 300, and something like 10% of those who become students usually do not actually become dentists.

The Committee believes that a comprehensive scheme, if framed and administered in a satisfactory way, will offer to the dental profession itself the best opportunity of obtaining its rightful place in the public estimation. "The knowledge that dentistry is making an essential contribution to national health" will in their view be one of the best ways of encouraging recruitment to the profession and securing "that ready co-operation which must be the foundation of any satisfactory dental service."

Sickness Records in Industry

The health of industrial workers depends on many factors, some of them in no way related to their work. Home life, education, and indeed the standard of the country's health services influence the general level of fitness of all sections of the community. Nevertheless, there is a direct relationship between occupation and health. Certain jobs can give rise

to specific diseases such as pneumoconiosis and lead poisoning, and the statistical records of the Registrar-General on occupational mortality act as an invaluable pointer to those trades which carry a high mortality rate; but it is a crude pointer and gives only the bare bones of the story. If workplaces are to be made as healthy as possible more must be known about the sickness rates of those who work in various industries, factories, and departments within factories. There are obvious reasons why this information is necessary. In the last decade new industrial processes have arisen. Must we depend on conjecture or possibly on increased death-rates 20 years hence to learn of their hazards? Moreover, some trades may well give rise to incapacity which does not shorten life. And no industrial medical officer can make a positive contribution to the health of the nation unless he knows the sickness rates of those workpeople for whose health he is responsible.

The Industrial Health Research Board, in their recently published report*, have attempted to provide a method of calculating the sickness rates of those who work in industry, but with slight modification it can also be used for those who work in hospitals and central and local government offices. Measures for sickness rates are given, and a method is suggested whereby sickness is classified into groups of common diseases which may have some relation to the industrial environment. Insurance doctors' certificates are usually the only available criteria for assessing types of sickness. They are not entirely satisfactory, but can be made more reliable only by giving better facilities for diagnosis to insurance doctors. This is only a beginning. It is a preliminary report which may need to be modified after further knowledge has been gained of its use. As yet there is no organised machinery for analysing sickness records on a national scale; but there is no reason why industrial medical officers should not keep records for their own use, and even compare the sickness rates of their own factories with those of other factories doing similar work. Such comparisons, which should be made under the guidance of competent statisticians, can help medical officers to keep their health services up to the mark. The basis for determining the sickness experience of the group is the sickness record of each worker, and previous research has shown that the reduction of sickness absence depends on the study of the individual no less than of the group.

Health is indivisible, and the services which care for health must not be sealed off into separate and unconnected compartments. It is the same man who lives at home, travels to work, and toils in the workshop, so the knowledge gained from the sickness records in the factory should be made available to the general practitioner and the medical officer of health, who combat disease and promote health by their activities outside the factory.

* *The Recording of Sickness Absence in Industry*. M.R.C. Industrial Health Research Board Report No. 85. 1944. H.M.S.O. Price 4d.

The Formulary Committee has made some alterations and additions to the Second Edition of the National War Formulary to come into force on February 1st, 1945. They conform with the Seventh Addendum to the British Pharmacopoeia and with the present supply position. Additions are also made, and of these the most important medically is cream of sulphathiazole and sulphathiazole for burns. As this cream takes some three hours to dispense it will be kept in the pharmacies ready for use in 1 oz. tubes only. As it falls in Schedule IV of the Poisons Regulations, prescribers must state the amount to be supplied. It is emphasised that if prescriptions are not for 1 oz. or multiples of 1 oz., delay in supply will be inevitable. For sterile powder of sulphathiazole, prescribers are asked to order 5 gm. or multiples. There is a shortage of galenicals made from *ipeacuanha*. The Scarce Substances Order No. 795 (1944) makes squill the alternative, but *senega* is again being imported, and ammonia and *senega* mixture has been added to the N.W.F. There is an acute shortage of colchicum. When the galenicals of this drug are unobtainable, colchicine tablets may be ordered, but doctors should prescribe these in minimal quantities and only where colchicum therapy is essential.

CREW ACCOMMODATION IN THE MERCHANT NAVY

By S. A. B. BLACK, M.D., D.P.H., D.T.M. & H.

Accurate information from which one could calculate the death-rate of British merchant seamen is difficult to obtain; nevertheless for many years statistical evidence has shown that seafaring is an unhealthy occupation with a high death-rate from tuberculosis. Home¹ (1934), reviewing the available statistics, showed that the Registrar-General's report based on the census information collected in 1921 gave a death-rate for seamen which was nearly double the standard rate. He examined the figures of an investigation carried out by P. Granville Edge for the Board of Trade in 1929, and showed that when deaths from violence at sea were excluded there were nearly twice as many deaths among unemployed or recently retired (within 12 months) seamen than among the far larger number of employed seamen; 17% of the deaths occurring within a year of leaving the sea were due to tuberculosis. The most recent definite information is contained in the Registrar-General's Decennial Supplement² to the 1931 Census, which was published in 1938. The standardised mortality of seamen from all causes except violence was 36% in excess of that of "all males," and the standardised mortality ratio at ages 20-65 was 147. (In the age group 35-45 the rate was 67% above the average.) Few occupations listed in the report give higher ratios than this.

Tuberculosis is the most frequent single cause of death among seamen with the exception of violent causes. Tuberculosis showed a standardised ratio of 148. In the age group 35-45 the ratio was as high as 171. Wood³ (1942) has shown that men from the merchant navy arrive for treatment for tuberculosis in a more advanced stage of the disease than do the general public. They are thus infective to their shipmates for some time before being segregated. He considers that overcrowding in living quarters on ships is the chief cause of the spread of this disease among seamen. Wilson⁴ (1936) found that during the eleven years 1924-1934, seamen in Cardiff had a mean annual case-rate per 1,000 of 12.55, which was twice as high a figure as that of any of 33 other occupations. The seafaring quarter of Cardiff had a death-rate from tuberculosis more than twice that of other wards of the city. The overcrowded conditions under which the seafaring population of this ward lived while at sea were considered to be the cause of the relatively high tuberculosis rate. "In favour of improving crews' quarters we have a wealth of medical opinion based on statistical evidence, but no power to act upon it."

Crew-space Standard

The Merchant Shipping Acts deal briefly in a few paragraphs with the subject of crew accommodation. The Board of Trade Instructions to Surveyors interpret with more detail the brief requirements of the principal Act. Section 210 of the Merchant Shipping Act, 1894, rules that every place in any British ship occupied by seamen should have for each man a space of not less than 72 cub. ft. and not less than 12 superficial feet. The Merchant Shipping Act of 1906 brought some slight improvement in the crew-space standard. The 1894 Act was amended so that not less than 120 cu. ft. and 15 superficial feet per man were to be provided, but in estimating the space, mess-rooms, bath-rooms, or washing-places were allowed to be taken into account, provided that the old standard of 12 sq. ft. and 72 cu. ft. was maintained in sleeping quarters. In practice this meant that there was little change. The old standard remained in force in sleeping quarters. A small mess-room measuring 15 ft. by 15 ft. can provide for 40 men the additional small space per man granted by the 1906 Act. Furthermore, this small improvement in crew-space standards does not apply to quarters "occupied solely by lascars."

Since 1906 oil fuel has largely replaced coal, thus saving space required for fuel storage on ships. Oil has also brought about a reduction in the strength of the crew, so that more

space should be available for fewer men. Yet despite this the 1894 space standard for sleeping quarters has prevailed for 50 years and is still the standard in use: 23 years ago this standard was referred to as being "three times the size of a large coffin."⁵

Preventive medicine has made many improvements in the condition of factory workers ashore, but has been less successful in its efforts to help merchant seamen. Home⁶ has made an interesting review of the campaign for improved accommodation for seamen from 1894 to 1922. The Royal Sanitary Institute has for long supported the case for improved conditions at meetings of its Congress of Port Sanitary Authorities. Progress has been very slow. Cadman⁷ (1935) made a survey of ships at the port of Hull which showed that crews' quarters closely resembled those of British ships 20 or 30 years previously.

The suggestion that medical officers of Port Sanitary Authorities should have a say in approving the plans of crew accommodation in new ships has often been made since the Port Sanitary Authority of London first recommended this before the introduction of the Bill of 1906 to amend the Merchant Shipping Act. In 1935, before the Board of Trade Instructions to Surveyors were revised, the Association of Port Sanitary Authorities made several recommendations for the improvement of hygiene in crews' quarters; the most important of these was that accommodation should be approved by a committee of which "one or more members is a medical sanitarian with a special knowledge of marine hygiene." They had been equally unsuccessful with a similar recommendation 13 years previously. If one reads the opinions of experienced Port medical officers during the last 40 years one is struck by the similarity, decade after decade, in the faults described and the improvements recommended. Advance in this particular field of British hygiene must surely have been slower than in any other.

Instructions (1937) on the Survey of Master's and Crew Space

The instructions published by the Board of Trade in 1937 have at last introduced many long-awaited improvements. They contain, however, much that can be criticised. Several clauses are partly defeated in their usefulness by the addition of a phrase which allows the surveyor a discretion as to whether he is to insist on the requirement or not. One also finds the word "should" and the expression "it is extremely desirable that" in places where compulsion rather than mere recommendation is required. The sentence "modifications of these instructions will be authorised in certain respects for ships carrying Lascar crews and may be permitted in the case of other non-European crews" is dangerously vague, and has an ominous ring to anyone who is familiar with the existing conditions considered adequate for some coloured crews.

Before construction is begun the only person to whom plans of the accommodation must be sent is the Principal Surveyor for Tonnage.

A Survey of Crews' Quarters

During the period November, 1942, to October, 1943, the crew accommodation of 60 British merchant ships was examined in detail by the writer. The ships examined included vessels of many shipping lines; they were visiting the port of Lagos as a result of war-time conditions, which placed this West African port in the unusual position of being on the route to the East. It can be claimed that these ships form a representative group of the cargo ships of our merchant service. Nearly all of them are vessels of between 4,500 and 8,000 tons (gross), and they include vessels belonging to 27 different shipping firms. Five of the ships were built before the end of the last war; 19 of them were built during the years 1919-1927; 15 were built between 1927 and the time the new Instructions to Surveyors came into force in 1937, and 21 are new ships, which have been built during the last four years. Only one-third of the ships had their crews consisting entirely of Europeans.

Little has been published in the past about the findings of a survey of this nature. Cadman⁷ (1935) has given infor-

mation on structural defects on British and foreign ships. Dearden⁸ (1929) showed in a diagram and table the relative standards of British and foreign ships as regards certain main structural points of sanitary importance. Wilson⁴ (1936) has shown in a diagram the prevalence of structural defects and dirty and verminous conditions, and Payne⁹ (1943) surveyed the hospital accommodation on merchant ships. Although the inadequacy of the space standard has often been pointed out, there is little published to show how far the existing standards are being enforced.

In each ship attention was confined to the crews' quarters—that is to the accommodation of seamen, firemen, greasers, and stewards—but not the cabins of officers or apprentices. Over 400 cabins accommodating 1,857 seamen were inspected and measured. The inspections were made by the writer, personally assisted by African Sanitary staff; all measurements were made and checked in the writer's presence. All temporary defects which might be attributable to war-time conditions were excluded from the survey. A discussion of the findings of this survey follows.

LOCATION OF CREWS' QUARTERS

Dearden in 1929 found that, while foreign owners were placing the crews' quarters aft or amidship in increasing numbers, British owners were somewhat surprisingly going back to fo'c'sle quarters. Since the 1937 Instructions came into force crew accommodation must be situated aft or amidships. This has been the rule for many years in Scandinavian and American ships. Of 21 new ships examined, three had managed to obtain permission to have fo'c'sle quarters. Of the 39 ships built before 1937, 17 had the crew accommodated in the fo'c'sle.

"OPEN-BERTHED FO'C'SLES"

Only one cabin out of a total of 152 in the 21 new ships had more than four bunks. In the 39 ships built before 1937, out of a total of 1,409 seamen 34% were accommodated in cabins containing not more than four bunks, 30% in cabins of five to ten bunks, and 36% in larger many-bunked cabins. Cabins containing more than ten bunks numbered 26 and were found in 22 ships. Most of the larger cabins contained mess tables, and in these cabins food was often stored somewhere among the men's baggage.

It is quite common to find that a 20-bunk compartment contains one or two small cabins partitioned off from it which open directly into the larger compartment. This is obviously a most unsatisfactory arrangement. Dearden found in 1929 that new British ships were retaining the system of many-bunked cabins at a time when the regulations of foreign countries were abolishing such cabins. The recent adoption of a system of smaller cabins each with its own portholes and roof ventilation constitutes a most valuable (though belated) advance.

INTERIOR CABINS

Space on the internal side of an alleyway is often the site where oilskin lockers, washrooms, and stores are situated, but in some ships interior compartments are found which are used as sleeping quarters. (The writer has seen a badly planned ship in which a row of seven interior cabins were placed between two alleyways.) Thirty-four interior cabins were found in 23 of the 60 ships; some of these cabins were supplied with adequate light and ventilation, but 13 of them were dark and stuffy. Ninety seamen (4.8%) were accommodated in interior cabins.

WALLS AND FLOORS

In 13 ships the floors of the crews' quarters were of wood; in the remainder some suitable impervious stone composition was used. The metal external walls of living quarters were suitably protected against condensation of moisture by a coating of cork-dust in 49 ships. In two ships a good inner protective coating of cement was used, and in two others the external walls were sheathed with wood. In five ships (two of them built in 1942) cabins were found with unprotected metal lateral walls, and in two others the cork dusting was too inadequate to be of use.

BUNKS

Of the bunks, 94% in the new ships and 70% in the older ships were made of metal; 23% of bunks in all ships were made of wood. Wooden bunks are apt to become infested with bed bugs.

The upper bunk of two placed parallel to the external wall obstructs ventilation and light. The placing of bunks on the inboard side is a recommendation of the Board of Trade, but bunks are still allowed to be placed along the ship's side provided only one tier is placed in that position. Two-tiered bunks along the ship's side were found in 44% of 298 cabins, examined in the ships built before 1937. In the ships built since 1937 they were found in three out of 152 cabins. A most pernicious method of arranging bunks is in the form of a frame of four or more bunks consisting of two side-by-side upper bunks and two lower ones, also side-by-side. A single metal rail is

all that separates the occupants of the two adjoining bunks, who must sleep with their heads about 12 in. apart. Cabins containing "frames" of bunks were always found to be grossly overcrowded. They were found only in the quarters of coloured seamen. Such side-by-side bunks were found in eleven large cabins in seven ships. Seventy lascars seamen (5.6% of all coloured seamen) occupied such bunks.

FURNITURE AND HEATING

A regulation 5½ ft. locker for each man was provided in all the new ships. In 16 of the 39 ships built before 1937 there were no lockers, or a quite inadequate provision of them. In large cabins without lockers the floor is cluttered up with wooden boxes and kit-bags, and clothes hanging in the room obscure light and ventilation. Anopheles mosquitoes could often be discovered in the folds of garments hanging in such cabins, where they find excellent cover.

The provision of a drying-room and an oilskin locker is now compulsory, and these should also prove of considerable health value. The nature of the heating arrangements in the crews' cabins were: hot-water radiators in 34 ships; single hot pipes running through the cabins in 21; electric heaters in three; and the old-fashioned iron stoves in four ships. No heating arrangements were provided in six of the ships; these ships presumably were originally intended only for trade in the tropics.

VENTILATION

The ventilation of sleeping quarters is too important a subject to be discussed adequately in this article. A well-ventilated cabin requires an inlet or outlet ventilator on the roof and ventilation openings between the cabin and the passage way; in addition, means of controlling the size of the inlet aperture and a diffusion board to protect the bunk below from a direct draught are desirable. The most satisfactory arrangement was found to be a cowl inlet ventilator opening directly into the roof of a cabin in which the partition walls between the cabin and passage stop a few inches below the level of the roof. Cowl ventilators opening into horizontal shafts which run along the length of a row of cabins are less satisfactory in the tropics. The different type of roof ventilation found in 421 cabins is given below:

Direct ventilation from cowls	180 cabins
Openings in horizontal ventilator shafts	98 "
Mushroom ventilators	43 "
Fanlights	22 "
Combinations of above methods	31 "
Other methods ("goose-necks," "torpedoes," etc.)	18 "
No roof ventilation	20 "

Seven per cent. of the cabins had no roof ventilation; 11% had no ventilation openings between the cabin and the alleyway. The inadequacy of the ventilation in these 18% of cabins was obvious to anyone entering them. There were in addition other cabins in which the ventilation was inadequate either because of overcrowding or because of the small size of the ventilation apertures. Most of the new ships showed a distinct improvement in the standard of ventilation. The Instructions recommend "some mechanical aid to natural ventilation" in vessels which trade to the tropics. The response to this recommendation is shown by the provision of electric fans in only eight of the 21 new ships (this may be because fans are hard to obtain during war-time). In all 60 ships 39 were found to have fans in the crews' quarters. Apart from the comfort and better ventilation a small well-fan can provide, it also has a useful anti-malarial function. The breeze of the fan not only discourages mosquitoes, but it makes a hot mosquito-proofed cabin more tolerable for the occupants, so that they have less desire to expose themselves to bites by sleeping on deck.

WASHROOMS

The 1937 Instructions have at last made the provision of wash-rooms and baths or showers compulsory in new ships. Previously their provision was only a recommendation. Dearden found that both basins and showers were provided in only 32 of 47 new ships built in 1929, and that six of the vessels had no washing facilities.

In this survey 12 of the 39 ships built before 1937 were without adequate washing facilities, the crew having to carry a bucket of water to their cabin or to the latrine or deck in order to wash. In some of the remaining 27 ships the bathing facilities were most primitive. Adequate baths and showers are provided in all new ships, and in addition a good drying room for clothes is also provided. This will help to reduce the high incidence of skin diseases.

MESS-ROOMS

The provision of mess-rooms was also a recommendation until the 1937 Instructions made this compulsory. Dearden found in 1929 that about half the British ships he examined had mess-rooms. In this series out of 39 ships built before 1937 mess-rooms for all the crew were provided in 18 ships—three of these ships had coloured crews and the remainder European crews. Mess-rooms for the deck crew, but not for the firemen, were provided in a further seven ships. No mess-rooms for the crew existed in 14 ships; all 14 were ships with coloured crews. Fifty-nine per cent. of all seamen in the ships built before 1937 were not provided with mess-rooms.

The above findings as well as those of Dearden made 14 years

ago show how unsuccessful has been the "recommendation method" in achieving the adoption of a necessary sanitary measure.

LATRINES

Most of the ships had satisfactory water closets of glazed stoneware or enamelled iron, but iron hopper-type pedestal latrines were found in four ships, and old-fashioned metal trough latrines were found in as many as twelve ships. In five ships the water closets numbered less than the Board of Trade standard of one per ten men. In six ships the latrine was so situated and ventilated that the odour communicated with either a cabin or a mess-room. This elementary error was made in three of the newest ships.

The well-equipped mess-rooms, wash-rooms and cabins in some of the new ships are often badly treated. The condition in which quarters are kept is disappointing, especially in the case of certain European crews.

OVERCROWDING OF SLEEPING QUARTERS

It has been explained that the space standard of 72 cu. ft. and 12 superficial ft. for each seaman is the minimum allowed in the sleeping quarters of any British ship, and that (as far as sleeping quarters are concerned) this standard has been in force since 1894, and applies both to coloured and British crews. Over 400 cabins in 60 ships were measured by the method laid down in the Board of Trade Instructions to Surveyors. Only the area of the floor covered by bunks and permanent locker furniture were excluded in calculating free floor space. All movable obstructions were treated as though they were not present.

The average height of cabins built before 1937 was found to be 7 ft. 8 in. The average for new ships was 8 ft. 1 in. Four of the new ships had the cabin heights less than the regulation 7 ft. 6 in. Two of the older ships contained cabins only 6 ft. in height. On the whole the general standard was satisfactory and there was little variation from the average. We can therefore ignore the cubic capacity measurements and confine our attention to floor-space measurements. Floor space is of more importance than cubic capacity.

SMALL AND MEDIUM-SIZED CABINS

In Table I the maximum number of seamen which each cabin is capable of accommodating so as to give 12 sq. ft. of floor space per man has been contrasted with the number actually accommodated, and the degree of overcrowding can be seen from the average number of seamen found in cabins of different size. This table refers only to cabins up to a size capable of holding nine bunks.

TABLE I

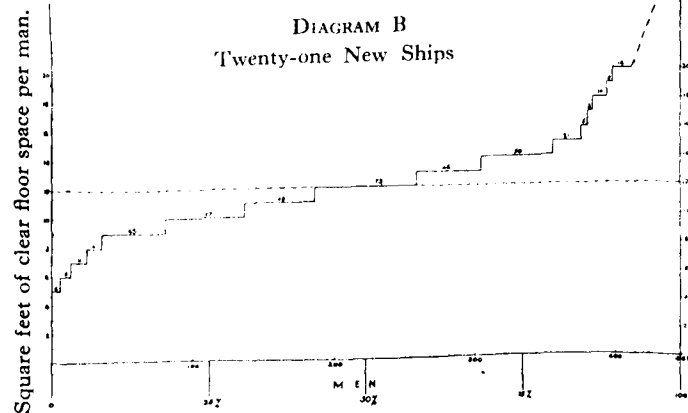
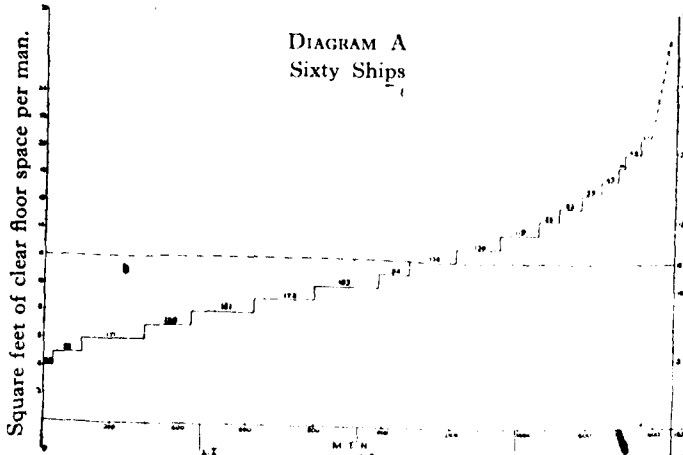
No. of cabins	No. of seamen each cabin should accommodate to conform with regulations	Total seamen actually accommodated	Average No. of seamen per cabin
58	1	91	1.56
157	2	375	2.38
101	3	350	3.40
64	4	277	4.3
8	5	51	6.4
17	6	130	7.63
"	7	53	10.6
8	8	78	9.75
4	9	47	11.75

LARGE OPEN-BERTHED FO'C'SLES

Eleven out of 22 cabins of a size suitable to contain ten or more bunks had less than 12 sq. ft. available for each man. Some, however, had a generous floor-space allowance. The two worst examples were a cabin suitable for eleven men which contained 18 bunks, and one suitable for 20 men in which 30 were accommodated.

FREE FLOOR-SPACE ALLOWANCE

The general degree of overcrowding is illustrated in Diagram A, which shows the area of free floor space (to the nearest square foot)



for all seamen in the 60 ships. The diagram shows that over 57% of the seamen have less than 12 sq. ft. of floor space each; 15.4% fall into the grossly overcrowded group, who each have only 4, 5 or 6 sq. ft.; at the other extreme there are about 4% who are fortunate enough to have more than 22 sq. ft. each.

In Diagram B the free floor space in the sleeping quarters of the 21 new ships is shown. When compared with the diagram for all 60 ships it can be seen that there is a definite improvement. 41.7% of the men in the new ships have less than 12 sq. ft. each, but only 18% are below the 10-sq.-ft.-per-man level.

"CERTIFIED TO ACCOMMODATE"

The Merchant Shipping Act requires that the words "Certified to Accommodate . . . Seamen" be cut in a beam on each cabin. This rule has slowly been forgotten. Only 149 cabins (about one-third) were so labelled. In 47 of these it was quite impossible to agree that the cabin was capable of accommodating the number for which it was certified. In older ships the words are often painted over and obscured. In one-third of the new ships there had been no attempt to follow this rule. This is unfortunate, as the idea is a good one.

PREVENTION OF OVERCROWDING

It is to be remembered that any overcrowding which is temporary and due to conditions of war has been excluded from this survey. Why are the crews' sleeping quarters so frequently overcrowded? Undoubtedly the initial survey is sometimes made in a careless manner. The Board of Trade surveyors are not public health officers and may not be particularly interested in the space standard. When a ship is built the owners may fail to allow for a possible increase in the number of the crew, as a result extra bunks are sometimes added to the cabins at a later date (one has seen examples of this). Re-surveys of the space in crews' quarters is made only on rare occasions; so added bunks are seldom detected.

Two-thirds of the ships in this series had coloured crews. This was to be expected in a tropical port. This is one reason why the findings were not more satisfactory. In the case of coloured crews any regulations which are only recommendations are usually ignored and other rules are less well enforced. All future rules should apply to coloured seamen to exactly the same extent as to British seamen. Their health is worth protecting if they are to man British ships. If a lower space standard were allowed for coloured seamen there might be a tendency to employ them in increasing numbers and to displace British sailors from employment. Apart from other disadvantages this would be serious for reasons of national security.

Port sanitary staff regularly inspect ships for sanitary nuisances in every large port in the Empire. There is available, therefore, at no increased expense staff to re-inspect ships for structural defects.

If port health officers in every large port could enforce the correction of structural defects discovered by their inspectors, then ship designers would soon learn that it was cheaper to construct crews' quarters satisfactorily from the start.

Summary

Statistics show that seafaring is an occupation with a high mortality. The British seamen's health gets less attention than does the health of his fellow countryman ashore.

The laws relating to health conditions afloat are out of date. The main Act requires revision. The new Instructions to Surveyors, though an improvement, need to be made more definite.

The findings are presented of a survey of the accommodation provided for 1,857 seamen in 60 British ships, and it is shown that the existing regulations are not being enforced as they should be, especially in ships with coloured crews.

The quarters of ships built since 1937 are an improvement; in a few cases they are excellent; the regulations are nevertheless being enforced loosely in the case of some of them.

The two improvements most needed are (a) an increase in the space standard in sleeping quarters; (b) the plans of the crews' quarters of every ship should be passed by a medical officer with experience of port health work before construction is started.

I have to thank the Director of Medical Services, Nigeria, for permission to publish this paper.

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REFLECTIONS ON PREVENTIVE MEDICINE*

By H. R. TIGHE, M.D., F.R.C.S., D.P.H.,

Medical Officer of Health, Swansea C.B.

There is a popular conception of the function of the general practitioner which, having been adopted by a certain section of the community, seems to have invaded medical thought and has begun to appear in medical planning. This is the idea that the function of the doctor is to prevent disease and to improve health, that the clinical doctor should be preventive-minded and not curative-minded. We used to be told that this was the theory of the ancient Chinese, who were said to have paid their doctors for keeping away sickness. It was not to be expected that those who failed to see any weakness in this plan as applied to ancient China could see any difficulty in adapting it to the modern world, although it may be a matter for surprise that so many in the profession itself were ready to play with the idea that the general practitioner of the future is likely to earn his living by keeping people well.

That this opinion is prevalent is rendered manifest not only by statements that appear from time to time in the medical press, some of which may possibly be of the nature of lip service, but by the pronouncement of leaders of medical thought in important reports. As an example of the latter, I quote the two following extracts:—

"The Commission has adopted for the purpose of its discussion the following broad divisions of the subject of medical service in this country: (a) To provide a system of medical service directed towards the achievement of positive health, the prevention of disease and the relief of sickness." (*Medical Planning Commission Draft Interim Report*.)

"Last, but not least, personal health tends to be regarded as something to be treated when at fault, but seldom as something to be positively improved and promoted and made full and robust. Much of present custom and habit still centres on the idea that the doctor and the hospital and the clinic are the means of mending ill-health rather than of increasing good health and the sense of well-being." (*The White Paper, "A National Health Service"*, page 8.)

I propose to examine this idea and for that purpose to consider the following questions: (1) What is preventive medicine? (2) By whom, and under what conditions, is it likely to be practised? (3) What is likely to be the effect upon the profession in so far as it is practised by its members, or indeed in so far as it is practised successfully at all?

What is Preventive Medicine?

According to Sir George Newman, medicine may be differentiated as threefold in aim; first there is, as he says, "The universally accepted idea of medicine as the provision of a remedy or cure for what we conceive to be disease (curative medicine); secondly, there is the avoidance or the prevention of its infection or causes, and when it is initiated or established, the prevention, reduction or modification of its results, or of disease-producing factors

* Presidential Address to the Welsh Branch of the Society. 1944.

ment that pemphigus neonatorum requires immediate notification to the medical officer of health suggests that it is in general a notifiable disease. It is not in every area that the L.E.A. assists on the educational side of the war-time nurseries; and day nurseries are better run in three than in two sections. The reference to financial assistance of the tuberculous does not make it clear that this is not of general application and is not a Ministry of Health measure. The H.T.S.T. process of pasteurisation is referred to as though this were an accepted manner of treating milk, being just as reputable as the more orthodox holder process.

To-day more than ever there must be a reluctance to include fresh matter. The subject of aerial conveyance and ward infection should warrant its inclusion even at the sacrifice of the new matter relating to the sulphonamides. Again, the discussion of the value of disinfection might be amplified, while the exclusion of contacts of infectious cases deserves more detailed treatment.

The volume is well produced and presented. Tonsillitis, however, is spelt sometimes with one "l," sometimes with two; it would be as well to decide on one method of spelling. The expenditure of a few lines to explain the reasons for the order in which diseases are discussed in Section 2 would be justifiable. Failing any other basis, grouping according to the commonest method of contraction of the communicable diseases has much to commend it. Again, would it not be better to relate the sanitary law to the subject matter and so avoid the rather overwhelming last section of the book?

These criticisms are really an indication of the importance of the book, which has so deservedly won for itself the place it holds. Special mention should be made of the very excellent treatment by Dr. G. P. Crowden of the rather difficult subject of personal hygiene.

Handbook of Diagnosis and Treatment of Venereal Disease.

By A. E. W. McLachlan. Edinburgh: E. and S. Livingstone. 1944. Pp. 352. Price 15s. net.

The subject of the venereal diseases looms large in the minds of those whose responsibilities include the control of communicable diseases, and whose plans must be laid for the difficult post-war years. Many practitioners lack the knowledge and experience required to meet the problems ahead, because some medical schools have failed to give due prominence to this subject in early training, and because the fall in the incidence of venereal diseases during the years between the wars led to failure to appreciate the size of the problem. The writer of this small and readable handbook has a large practical experience, which includes the teaching of students, and the nature of his appointments has impressed upon him the importance of the social implications of these infections. The book is well written and excellently illustrated. The teaching is orthodox, and in controversial matters the writer's opinion is expressed dogmatically—a measure which is inevitable and appropriate to a work of this size. The sections on the diagnosis of the muco-cutaneous manifestations of syphilis are particularly good. The clinical signs are carefully described in clear detail and points in differential diagnosis are tabulated for easy reference. The text includes excellent photographs of most of the lesions described, many of them in colour.

The bewildering rapidity with which methods of treatment have advanced in recent years places a great handicap upon the writer of textbooks, as in this instance, where the subject of treatment with penicillin has no mention. In compressing a large subject into small space it is always difficult to decide what should be included and what omitted. On the whole the author has made his decisions wisely; but a place might have been found for a brief discussion of prophylaxis, and some reference to the provisions of Defence Regulation 33B. At the same time it would have been better to omit such highly technical matters as urethroscopy in the female and posterior urethroscopy in the male. These are minor points, and the book may be warmly commended to those who desire a good grasp of the subject but whose time and inclination preclude the study of large and detailed textbooks.

Vital Statistics and Public Health Work in the Tropics. By P. GRANVILLE EDGE. Foreword by Professor Major GREENWOOD. London: Baillière, Tindall & Cox. 1944. Pp. 188. Price 12s. 6d.

It is generally acknowledged that the vital statistics of our tropical colonies are incomplete in many respects, and variations in the presentation of the data makes territorial comparisons unreliable. The critics have perhaps failed to realise fully the not inconsiderable difficulties of the medical statistician in the tropics. Major Edge, while urging improvements, approaches these problems sympathetically and with first-hand experience. His book differs from the usual treatise on vital statistics, being concerned with the practical difficulties associated with the collection of data among indigenous populations. Reliable knowledge about the size of population, and the number of births and deaths, and of diseases, is essential for assessing the effectiveness of reforms attempted by public health authorities. This knowledge has generally been lacking in the past, perhaps because methods successfully applied in Europe cannot be enforced, because collection of reliable data is difficult, and because Colonial affairs arouse little interest at home. The book contains practical suggestions for modifying the British system to meet the conditions of life in the tropics, and deals with census enumeration, registration of births and deaths, morbidity records, disease nomenclature, and the collection of data by non-medical registrars. The need is stressed for a careful understanding of the social and economic life of the people, their customs, superstitions and taboos. Examples are provided of the erroneous conclusions that may be drawn if the significance of these factors is misunderstood. All workers in the Colonial Public Health Services should find much in this book that is constructive and helpful, and the abundant references will encourage those who strive for more efficient methods of "human book-keeping" in the tropics.

Casualty Work for Advanced Students. By A. W. Macquarrie, M.B., CH.B. Edinburgh: E. & S. Livingstone. 1944. Pp. 231. Price 4s. 6d. net. Postage 3d.

Those who have been responsible for the casualty sections of the Civil Defence Services know only too well the difficulties facing those who have had to train personnel of first-aid posts and the rescue service. The training in first aid is based on the manuals of the voluntary aid societies. Excellent as these are, one cannot expect them to continue to be of interest to members of the casualty service, many of whom have now entered their sixth year of activity. To meet the necessity for taking the instruction of these classes a stage further a number of volumes have now been prepared, but rather late in the day for those more concerned with the casualty section of the Civil Defence Service. Some of these books will doubtless be used for peace-time training. An excellent example is the small volume prepared by Dr. Macquarrie. While he avoids repetition of much of the data in the elementary manuals, he successfully limits the range of his teaching to first aid. He presents information in an interesting manner. We especially commend such chapters as those on the effects of war irritant gases, and the lucid dissertation on apoplexy based on the limited knowledge the student must have of anatomy and physiology. The author's teaching on the removal of spinal injuries is in accord with the recent instructions of the Ministry of Home Security, and full instructions are given about the blanketing of stretcher cases, where it is insisted that there should be more blankets below than above the patient.

In future editions reference to the absorption of sugar and alcohol from the stomach might be amended, and an explanation given of the stimulant as opposed to the nutritional value of alcohol. On page 82 it is insisted the patient should be got to hospital without delay. While fundamentally correct, this advice is contrary to the correct instructions on page 210, where it is agreed that it is to the patient's interest that time should be afforded for affixing a Thomas splint to a casualty with a fractured femur; in some other cases, too, might it not be better to delay removal until the condition of the patient improves sufficiently to enable him to stand the journey?

SOCIETY OF MEDICAL OFFICERS OF HEALTH HOME COUNTIES BRANCH

President: Dr. M. Manson, G.M. (M.O.H., Wood Green).
Hon. Secretary: Dr. C. Herington (M.O.H., Dagenham).

A meeting of the Home Counties Branch was held in London on October 13th, 1944, there being present the President and 22 members. The minutes of the meeting held on July 14th were confirmed and signed.

Dr. Malcolm Barker, in vacating the Presidency of the Branch, spoke of the distinguished career of the President-Elect, Dr. Manson, and of the honours that had been bestowed upon him. The applause which followed his investiture with the badge of office testified to the esteem with which Dr. Manson is held by the members. Dr. Manson recorded the appreciation of members for the services of his predecessor during the year.

The President introduced Dr. R. Sutherland, of the Central Council for Health Education, who said that the public was showing an increasing interest in matters affecting public health. The progress made, however, would depend upon the extent to which the ordinary citizen was conscious of the problems, and was prepared to make his contribution to their solution.

We had, therefore, to inculcate healthy habits by giving the knowledge of the structure and function of the human body, the way in which disease attacks us and the counter-measures which are open to us, and by instruction in parentcraft. An immense amount of health education was at present being carried out, but largely in an opportunistic way. As a short-term policy we had the task of removing existing prejudices and ignorances and attempting to alter existing bad habits. To be really effective, however, health education would have to be planned to include the proper health education of the child from infancy onwards.

Dr. Sutherland said that the parent, the most important health educator in the child's life, was often not fitted to undertake this work. It therefore fell to teachers, youth leaders, doctors, nurses, sanitary inspectors, welfare workers, etc., to try to counteract wrong training at home and to inculcate new attitudes and habits.

The Health Department and the Education Department, he said, were both concerned with health. On the one hand, the medical profession could contribute technical knowledge; on the other the educationists could advise on educational methods likely to give the best results. The Education Department was responsible for the health education of specific ages in specific places. The Health Department was responsible for the health education of all ages everywhere. The didactic statement had its place in the early stages of health education, but ultimately real progress would depend upon a true educational process. Many speakers took part in the discussion, and in replying to Dr. Sutherland said that ultimately it was hoped that area representatives would be appointed to each Civil Defence Region who would build up area organisations to advise local authorities. He thought propaganda relating to venereal disease and sex education should not be given undue emphasis but should be treated *pari passu* with other social problems.

A vote of thanks was proposed by Dr. Caryl Thomas, in whose view the health visitors and sanitary inspectors should be regarded as the educators of prime importance in the areas they served. Dr. Morrison, in seconding, mentioned that Dr. Sutherland was both an expert and enthusiast in his subject.

A meeting of the Home Counties Branch was held in London on November 10th. There were present the President and 37 members. The minutes of the meeting held on October 13th were confirmed and signed.

Dr. J. E. Underwood, Senior Medical Officer, Ministry of Education, delivered an address on the Education Act, 1944, and its medical implications. Dr. Underwood, who is a member of the Branch, reviewed the legislation leading up to the present Act and defined "excepted areas" and "divisional executives" in some detail. He stated that the new Act provided that all those persons attending educational establishments must be given free medical treatment and that they must submit to medical inspection as required by the Authority. The schedules of inspection were under consideration, and it had not yet been decided what intervals would be prescribed or, in fact, whether the Ministry should lay down rules regarding this. Another point for decision was whether records should be continuous from entry to leaving. The treatment schemes would ultimately be integrated with the National Health Scheme. Much of the treatment would be carried out by specialists to be employed by local education authorities. The Ministry of Education wished to encourage wider clinical activity for school medical officers. Pupils attending County Colleges would be required to be under medical supervision. The minimum attendance at these colleges would be one full or two half-days a week for all persons up to the age of 18.

years. This would cause some difficulties in the arrangement of medical treatment schemes and it might be necessary for sessions to be held in the evenings. There should be no conflict with the work of the examining factory surgeons and works' doctors. Under the new Act children suffering from mental deficiency need not be certified unless the parents refused to allow them to attend special schools. It was proposed to increase the number of categories for handicapped children for treatment at special schools, and such children as the partly blind or partly deaf would, if their disability permitted, attend ordinary schools.

A lively discussion ensued. One school medical officer stated that he had information that county councils discouraged local authorities from applying to acquire the status of "excepted areas," and that such authorities were even threatened if they should make such applications. Another member was anxious to know why officers of an efficient Part III authority should be transferred to the local education authority. Another questioner sought information about the position of an authority if a child attended a private doctor's surgery and through his parents presented the bill to the local authority, it being borne in mind that all treatment under the Act must be free. It was also asked what would be the position of a local authority if a child should develop an acute condition during school hours and it was necessary to transfer it to hospital. Who would be responsible for expenses incurred?

A vote of thanks having been passed, Dr. Underwood replied.

YORKSHIRE BRANCH

President: Dr. J. A. Fraser (C.M.O., North Riding).
Hon. Secretary: Dr. J. M. Gibson (M.O.H., Huddersfield).

An ordinary meeting of the Branch was held in Leeds on September 29th. Thirty-seven members and one guest were present.

The minutes of meeting held on July 28th were approved. Information was received that five new members of the Society would be attached to the Yorkshire Branch.

SCHOOL MEDICAL SERVICE

Dr. H. M. Cohen, School Medical Officer, Sheffield, opening a discussion on aspects of the school medical service, said that the primary work of the school medical service was the inculcation of the laws of health—in relation to nutrition, exercise, training in right habits, sleep, etc. The family doctor, the hospital, and the local authority must work together. The school M.O.s had made a specialty of discovering departures from normal health in school children. There was no fixed division between treatment and management. The object was to secure "wholeness"—and this could not be achieved satisfactorily by practitioners whose main experience was at the bedside. But there must be team work, and this predicated a leader. In assessing a child one must have knowledge of the background, the income, and the income per head. Nurture and environment were important. For the school medical service the maxims were: fewer prescriptions, more sociology, more humanity. All available information had to be obtained from every source and in this connection the voluntary hospitals had, up to now, not done all they might. In Toronto the Children's Hospital was the centre of the child health services, and this was said to work well.

Dr. Cohen thought school M.O.s should be concerned with supervision of the dietaries for school meals; health education; the educational psychological service, in which there were special opportunities to-day for retarded children, children with specific educational disabilities, and for vocational guidance; the care of boarded-out children, and the problems of difficult families. There should be close integration of the different sides of the school medical work. The dental clinics and dental hospitals should be associated more with each other and with throat and nose clinics and nutritional experts. The speech clinic, in its relaxation methods, could be employed in the treatment of asthma and other spasmodic disorders. Audiometry was now essential. Rheumatic children should receive more attention; clinics and hospital schools should be related to the school medical service. He would suggest a perusal, by the school M.O.s, of general practitioners' sickness certificates for school children. These would yield information about rheumatism just as surely as would formal notification. The importance of special nutrition tests was stressed, and also the necessity for investigation of phlyctenular keratitis and erythema nodosum by tuberculosis specialists. Dr. Cohen ended by referring to the need for school medical officers to take an interest in the statistical evaluation of the findings of examinations of the children in the area. School medical work was not the monotonous job some people said it was; it was full of interest and worth doing.

Dr. V. H. ATKINSON, School Medical Officer, Bradford, said that as a houseman the young doctor saw the "cream" of the cases of child disease. The interest thus engendered must be sustained so that the school medical officer would show enthusiasm in the prevention of disease. He believed in home and school councils. Children must be encouraged to health by positive instruction. The

mirror in the remedial gymnastic room exemplified this. The family was the true unit with which the school medical officer should deal, and the family needed long-term education.

Dr. E. C. BENN wondered if intelligence tests were of value in dealing with "misfits." Dr. J. TUDOR LEWIS thought the school medical officer must be mainly an administrator and not a clinical expert; no man could be expert on everything. Dr. E. D. IRVINE thought the school medical service had unrivalled opportunities because it was the only public health service that could (broadly speaking) carry out supervision, and in many ways initiate the necessary remedial measures without the consent of the persons concerned. He thought that a general practitioner could not look after sick people and at the same time do school medical work. The school children would suffer.

Dr. H. M. HOLT deprecated too finicky an outlook about diet. Dr. W. S. MACDONALD thought the integration between the public health and school medical service was inadequate, especially centrally and also between them and the general practitioners. Dr. G. E. ST. CLAIR STOCKWELL had found the help of attendance officers ("kid-coppers") invaluable. The function of the medical officers was to spot defects not to make detailed diagnoses. He welcomed the establishment of the D.C.H. Dr. H. T. BATES thought the great thing was to educate parents to take advantage of the facilities offered.

WELSH BRANCH

President: Dr. J. GREENWOOD WILSON (M.O.H., Cardiff C.B.).
Hon. Secretary: Dr. G. McKIM THOMAS (M.O.H., Cardiff R.D.).

A meeting of the Welsh Branch was held at Cardiff on Oct. 26, there being present the President and 16 members.

The meeting had before it the report of the Chairman of Salaries Committee, and arising therefrom the Branch resolved to submit to this Committee, for their consideration, the following: (1) That Medical Officers of Health who are also medical officers of an infectious disease hospital should receive additional payment for this latter service, as this is not always the case under the Askwith Memorandum. (2) That in the event of the death of a medical officer, whether before or after retirement, adequate provision should be made for dependants and also that consideration should be given for years spent in training in determining years of service.

The President installed Dr. H. R. Tighe (M.O.H., Swansea) as President for the Session 1944/45, and Dr. Tighe proposed a vote of thanks to Dr. Greenwood Wilson, who had been President of the Branch for the past six years. The newly-elected President gave his address under the title of "The Doctor and the Public: Some reflections on Preventive Medicine," which is published at p. 43 of the current issue.

COUNTY DISTRICT GROUP

President: Dr. A. F. ADAMSON (M.O.H. and School Med. Off., Hendon).

Hon. Secretary: Dr. G. F. BRAMLEY (M.O.H., Bexley).

A meeting of the Group was held in London on Oct. 27. There were 23 members present, with the President, Dr. A. F. Adamson. The President and Secretary of the School Medical Group also attended. The minutes of the last meeting held on March 17 were taken as read and signed by the President.

The meeting considered the Education Act, 1944, and Circular 5 of the Ministry of Education, especially with respect to the position of M.O.'s.H. of County Districts and the proposed Divisional Executive Committees. Resolutions of the Yorkshire Sub-Group and the North-West Sub-Group and recommendations of the temporary Committee of the School Medical Group, were also discussed. A memorandum prepared by the President of the School Medical Group was before the meeting.

It was resolved unanimously:—

1. That the efficiency and initiative of the School Medical Service depends on effective delegation to the Divisional Executive (or excepted district) and on the status of the local school medical officers in relation to the new Executives; that the local school medical officers should administer the local school medical departments and advise the Divisional Executive, submit reports and make an annual report on matters affecting the school medical services in that area, in much the same way as obtains at present in Part 3 Authorities; that a suitable title for the school medical officer of the Executive would be Divisional School Medical Officer; that if the services of existent whole-time officers who are now Part 3 school medical officers are utilised, then it is essential the local status of these school medical officers should not be prejudiced.

(2) That the above resolution be forwarded to the Council of the Society and that the Council be asked to arrange for a deputation including representatives from the County District and school medical service groups to be received by the Minister of Education to discuss the above points, to clarify the future position of the existing Part 3 Authority school medical officers, and to discuss the future of the school medical service, and that the Council be asked to include in the membership of the delegation: The President of the Group (Dr. A. F. Adamson), Dr. Irvine of Shipley, Dr. Kershaw (President of the School Medical Services Group), Mr. Sleight of Chatham, and the Hon. Secretary of the Group (Dr. G. F. Bramley).

(3) That the Hon. Secretary circulate to members of the Group and the Secretary of the School Medical Services Group copies of the memorandum submitted to the meeting by Dr. Kershaw.

(4) That a meeting between representatives of the Association of County Medical Officers and the nominees in Resolution 2 be arranged.

Council of the Society of Medical Officers of Health, 1944-45

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SOCIETY OF MEDICAL OFFICERS OF HEALTH

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EDITORIAL

The "Sweet Waters" of London

That coarse old eighteenth century novel, *Humphrey Clinker*, by Smollett, contains the following passage:—

"If I would drink water I must quaff the mawkish contents of an open aqueduct, exposed to all manner of defilement, or swallow that which comes from the River Thames, impregnated with all the filth of London and Westminster. Human excrement is the least offensive part of the concrete which is composed of all the drugs, minerals and poisons used in mechanics and manufactures, enriched with the scourgings of all the wash tubs, kennels, and common sewers within the bills of mortality."

That is a picture of the water supply of the latter days of Dr. Johnson's London. It is a wonder that any citizen escaped the cholera. The curious thing is that, although much disease prevailed, the water supply was not convicted, scarcely even suspected. The common belief was that contagion was conveyed from the exhalations of a polluted environment; therefore the construction of drains and sewers went ahead rather than the safeguarding of the water supply, and the Thames, in consequence, became more contaminated than ever. Indeed, it was not until our modern knowledge of contagion was opened up through the discoveries of Pasteur, Eberth, and Koch that water became suspect. One man who, in advance of his time, persistently pointed out that polluted water was a principal agent in the spread of cholera was Dr. John Snow in the middle of the nineteenth century, and for many years so great a sanitarian as Sir John Simon remained incredulous.

Lieut.-Colonel E. F. W. Mackenzie, director of water examinations for the Metropolitan Water Board, gave an interesting lecture at the Royal Institution recently in which he traced the history of London water from Elizabethan times. One of the outstanding names in the latter-day story is that of Sir Edward Frankland, who was for many years, before the creation of the Board in 1902, analyst of the water supplied by the various waterworks companies. It was Frankland who made observations on the effect of adequate filtration through sand and demonstrated the reduction in bacterial content brought about by such filtration. With Koch's method of estimating bacterial impurity in water, Frankland first laid down, in the 'eighties, a bacterial standard of purity for domestic water supplies.

The Metropolitan Water Board set up its own department of water examination, of which Sir Alexander Houston had charge for nearly 30 years, but until 1921 there were two persons whose duty it was to safeguard water purity, one being the water examiner, an officer of the Local Government

Board, under the Metropolis Water Act, 1871, and the other the Board's own director of water examination. Eventually the first of these offices was abolished, and the duty of safeguarding the purity of the supply has for nearly a quarter of a century devolved entirely upon the Board's director.

Sir Alexander Houston introduced a number of revolutionary changes, especially, in 1909, the regular use of water purified by passage through a storage reservoir; in 1916, chlorination; and, in 1923, the use of primary mechanical filters antecedent to slow sand filtration. These are the processes now in use to ensure that the water supplied over an area of 575 square miles for the use of 7,000,000 people shall not be injurious to health. Two-thirds of London water still comes from the Thames—not exactly the "sweet Thames" of Edmund Spenser—one-sixth from the River Lea, and the remainder from deep wells lying in the great chalk basin beneath London. The well water requires only chlorination, but the river waters are, of course, heavily polluted and contain silt and a great variety of aquatic life, and require elaborate purification before use. Since 1939 pre-chlorination—that is to say, the use of chlorine before as well as after filtration—has been employed at all the filtration works, and an increase in the terminal dose of chlorine has also been made, with the result that sometimes there has been a slight taste in the water when it has reached the consumer. Colonel Mackenzie pointed out in his lecture that, if some purity is not to be sacrificed, these occasional chlorinous tastes can be eliminated only by the construction of large tanks in which the water may be retained for a sufficient time to allow a smaller dose of chlorine to do the work for which at present a comparatively large dose is required; and the construction of these tanks has not been possible during the war. A slight taste of chlorine is not a large price to pay for purity. There are also other tastes in water. The river waters may sometimes be described as having an earthy flavour, and the reservoirs are subject to algal growths which, by the liberation of essential oils, impart to the water an aromatic or "fishy" taste, which is removed by the introduction of activated carbons having a large adsorptive capacity for foreign molecules.

The meticulous work which goes on behind the scenes in safeguarding London water could properly be described only within the compass of a volume. In one year as many as 38,000 routine analyses are made. The war and the aerial bombardment of London have brought new problems to the Metropolitan Water Board. Every conceivable form of damage has been inflicted upon its immense and elaborate system. Reservoirs have been cut off from the works by the destruction of aqueducts. Bombs have fallen into filter beds and caused short-circuiting between filtered and unfiltered water channels.

Water mains have been broken in large numbers, and at the same time sewers have been broken, with consequent danger of leakage of sewage into the water supply. The peril of the introduction of chemical poisons into the water, deliberately or accidentally as by the use of poison gas bombs, has always had to be kept in mind. Special precautions were taken in the shape of intensified laboratory examination and control, and of the guarding of works and reservoirs. Especially was it provided that there should be at many points duplicate and emergency installations for chlorination, seeing that chlorination, which is normally regarded as no more than an accessory safeguard, might in the circumstances of war become the most important or even the only barrier against water pollution.

In the result not a single case of typhoid fever or other waterborne disease has been attributed to the water supply. There is not a shred of evidence that the water supply of London, despite the grave risks which enemy action created, has been less safe than before the war. The bacteriological analysis of 50,000 samples in the course of four years has shown all but a fraction of 1% of them to conform to the highest standard of bacterial purity. The Metropolitan Water Board, therefore, deserves well of the London public. Its officials are in the tradition of Sir Hugh Middleton who brought the waters of Hertfordshire to London—"an immortal work," says the inscription on a memorial to him at Amwell Pond through which his New River flows, "since man cannot more nearly imitate the Deity than in bestowing health."

Food Rationing and Supply

The League of Nations have published a further analysis of the food situation throughout the world under the title of *Food Rationing and Supply**. The new report is highly documented and contains a wealth of information of the greatest value to all persons interested in nutrition. Some of this is analysed in an article by Dr. Fraser Brockington, published elsewhere in this issue. It is particularly interesting to see the different ways in which different countries endeavour to meet the new situation which the world war produced. Some, like Germany, found themselves deprived of imports from overseas and have been forced to impose a rigid system of rationing in which very few articles have been obtainable "off the ration," and the varying needs of different members of the community has had to be met by differential rationing. Differential rationing seems to have reached its peak in Sweden, where there are 50 different categories. Other countries, like the United States and Canada, have had to meet the situation of great surpluses of certain foodstuffs owing to the inability to export on the pre-war basis. In some cases wheat has had to be used as a fuel or in the manufacture of alcohol in the production of rubber. England has occupied an intermediate position: she has had to submit to considerable restriction of imports but nevertheless by great ingenuity and by doubling her home production of food she has maintained a flexible 50% system of rationing which has avoided the difficulties of differential rationing and left every member of the community the right to consume as many calories as desired. It is of interest to study the difference between the results of the rigid system of Germany as compared with the flexible system in England.

During the German occupation any analysis of the food situation on the Continent has proved of the greatest difficulty, and as the League of Nations study was completed before the re-occupation of Europe particular interest should attach to the study of the conditions which will have been found there. This will take many months and in the meantime we should keep an open mind on the subject. So many hasty statements have been made as to the conditions which have been found that we should be very unwise to accept anything at the present. It is to be hoped that the League of Nations will be able to report further on this matter shortly.

* Published by Allen and Unwin, 1944. Pp. 101. Price 4s. 6d. net. (The previous volume on this subject was entitled *War-Time Rationing and Consumption*, published in 1942.)

PUBLIC HEALTH SERVICES AT THE CROSS ROADS*

By V. T. THIERENS, M.B., CH.B. D.P.H.

Medical Officer of Health, Blackburn County Borough.

The achievements of the health and medical services of this country are a proper matter for pride, but they afford no ground for complacency. If they have resulted during the present century in a higher level of common health, an improved infant and maternal mortality, and a lowered incidence of many serious diseases, and have, moreover, stood the test of total war, it is not because of ideal organisation, but because of the ability, energy and public spirit of those who administer them. The various services came erratically into existence, with consequent overlappings and shortcomings. A better co-ordination is the objective behind all the present proposals and counter proposals. It is not a question of abandoning a road hitherto travelled, but of continuing it along one or other of the forks to which the present stage of social development has brought us.

Let us consider from this point of view the most recent large development—namely, the local authority general hospital, and the administrative changes which now portend for it and, with it, for a number of associated services.

Inheritance from the Poor Law

Previous to the Local Government Act, 1929, the hospitals in every district were controlled by different bodies and carried out their functions with little semblance of co-ordination. There were voluntary hospitals, local authority institutions for the treatment of tuberculosis and of infectious diseases, and institutions provided by Boards of Guardians under the Poor Law administration. The paramount duty of Boards of Guardians was relief of destitution, and this was interpreted narrowly or generously according to the individual Board. Some Boards provided little more than efficient nursing in senile and chronic cases, while others furnished skilled medical and surgical care for the sick. Many of the old poor law hospitals were most efficiently run; nevertheless, it remained an anomaly that in the same administrative area two separate statutory bodies—the Guardians and the local council—should be responsible for hospital administration.

The Local Government Act, by the transference of poor law hospitals to County and County Borough Councils, gave to the Councils, particularly those which "appropriated" their hospitals, a much-needed opportunity to co-ordinate their health services. A complete fusion of health services could not, however, be realised in areas where the management of the transferred hospitals was not brought under the Public Health Acts. Many authorities were fortunate in the type of institution transferred to them, but others inherited out-of-date and inadequately staffed institutions which, unless upgraded, were incapable of playing their part in a new health service. A large number of the backward hospitals have, since transfer, been so equipped and staffed as to enable them to undertake the same class of work as can be done at good voluntary hospitals, but some have remained very much as they were in the old days of the Guardians. Thus in one administrative area may be seen a first-class rate-provided hospital, while a neighbouring area has nothing very much better than an institution for the chronic sick. Again, many contiguous authorities have general hospitals with expensive equipment and specialist staff, which as neighbours they might well have shared, and so have avoided unnecessary duplication. Had the Act provided for some sort of pooling of local authority hospital resources, such waste of staff and equipment could have been curtailed. Unfortunately the Act did nothing of the sort, nor, apart from a one-sided provision requiring the authorities to consult the voluntary hospitals about changes in their general hospital accommodation, did it bring the voluntary hospital into the picture.

*Presidential Address to the North-Western Branch of the Society.

Varied Character of Voluntary Hospitals

It is not only the local authority general hospitals which vary widely in the extent and efficiency of their services; the voluntary hospitals show the same variation. They range from the teaching hospitals and from others which, though non-teaching, are excellently equipped and staffed, down to the small cottage hospitals. The last-named are often open to all the practitioners of the area, who sometimes outnumber the beds provided, and many of them lack the experience to undertake, for example, the abdominal emergencies which they may have to attempt. The cottage hospitals are to be found, for the most part, in small communities, where they sprang up at a time when absence of rapid transport had the effect of isolating large areas of the country from existing hospital centres. In these circumstances they served a useful purpose by providing hospital facilities for patients and practitioners who would otherwise have had none at their disposal. Now that the major hospitals have been made readily accessible to all except the most isolated communities and the smaller independently staffed hospitals have been brought within the reach of an expert visiting staff, little case remains for the independent existence of cottage hospitals, though they should by all means continue as out-stations or recuperation centres grouped around a major hospital. Another hospital grouping which is very desirable is that of major hospitals with teaching and other centres providing such facilities as, for example, neuro-surgery. Some hospitals have unofficial working arrangements of this kind, others plough a lonely furrow, and over the country as a whole no well-knit mutual aid arrangement exists.

An example of hospital co-ordination which might well be followed here is given us by Denmark. In that country the National Health Service provided that each county should have one or two central hospitals, covering not only medicine and surgery, but also the specialties and forming the nucleus of a comprehensive system which embraces outlying general hospitals of the usual type. Although our own hospital system has long offered opportunity for organisation on similar lines it was not until 1935 that ways and means of effecting reform were first explored by the Sankey Commission, which recommended the formation of hospital regions. Later the British Hospitals Association set up a provisional central council to implement the Sankey recommendations, but this did not get very far. More recently, Lord Nuffield endowed a hospital trust to encourage the formation of regional and divisional hospital councils through which grants could be made to constituent hospitals. So far, however, little has emerged in the way of a co-ordinated voluntary hospital service. The need for some policy effectively to group the voluntary hospitals into associated units jointly capable of dealing with all types of sickness is important, and equally so is the association of the local authority general hospital with its voluntary counterpart.

Joint Hospital Committees

With this end in view, hospital councils have been set up between local authority and voluntary hospitals in a number of important areas and have achieved a measure of success by eliminating wasteful competition, pooling their resources, and, what is of equal importance, effecting a spirit of goodwill among the constituent bodies.

My personal experience of a joint hospital committee has been obtained as the result of a modest scheme between the Blackburn voluntary and local authority hospitals, which jointly serve a community of 260,000. For a town of its size, Blackburn is in the happy position of possessing physicians and surgeons whose skill and experience give them consultant status in the eyes of their general practitioner colleagues. No men were available locally, however, who were willing to specialise in obstetrics and in pathology. For these reasons the voluntary hospital and the local authority decided to fill the vacancies by whole-time appointments. This policy has been fully justified, and but for the war additional appointments would have been made. Without the co-operation of the voluntary hospital and the local authority we should have had great difficulty in supplying these essential services.

Many hospitals attempt to provide services they cannot adequately support, and a similar state of affairs exists in the general health activities of local authorities, particularly the smaller ones, but not excluding certain county and county borough councils.

The Small Fever Hospital

The small fever hospital is a case in point. When many of these places originated, the alpha and omega of infectious-disease control was isolation. The prophylaxis of scarlet fever and diphtheria was unknown, and primitive methods of sanitation led to a high incidence of enteric infections. The smaller isolation hospitals then served a useful purpose, but one might well ask whether they have not outlived their use as independent units. For long periods they may lie empty of patients while staff and other upkeep charges remain to run up a rate out of all proportion to the services the limited resources of the hospitals can provide. Some, for instance, are in clinical charge of men whose other commitments, together with the restricted clinical material and facilities offered by the hospital, give them little opportunity of acquiring up-to-date knowledge of, and practice in, infectious-disease therapy. Whilst straightforward infections might well continue to be dealt with under such conditions, what of the ear complications of scarlet fever and measles, or the crippling possibilities of poliomyelitis? Such cases, if disaster is to be averted, require both the unremitting and readily available care of specialists, and attention from nurses well practised in their treatment. Can these requirements be met in many of the smaller hospitals? Again, penicillin is now available for the treatment of infectious disease in civilians, and will be issued subject to certain conditions, including strict bacteriological control and the concurrence of two experts instructed in its use. These are conditions which many small and outlying hospitals may well find difficulty in fulfilling if they continue to act as independent units.

As for provision for smallpox, I have attended a number of Royal Sanitary Institute and other conferences, but at none of them has the local smallpox hospital been included in the list of show places open to inspection by the delegates. The sanatorium, the maternity home, the abattoir, the sewage works, yes—but never the smallpox hospital; and little wonder! The smallpox hospital often consists of premises unfit for any other form of local authority use, but, smallpox having become somewhat of a rarity, such premises are earmarked for the reception of this disease. Little used, yet widely provided, out of sight and out of mind, they become more useless with disuse, and serve little purpose except to support a caretaker.

The fact that our population is largely unvaccinated calls for the provision of smallpox accommodation, but not on such a scale as at present. The occurrence of smallpox in an area is followed by a rush for vaccination and a corresponding increase in the number of immunes. This justifies the abolition of much of our smallpox accommodation on the grounds of redundancy alone. Topping* considers that four smallpox beds per million of population should meet present needs, and suggests that the first case or two might be admitted to small ward units used in normal times for the more common infections in ordinary isolation hospitals, with the reception of overflow cases into second-line or convalescent hospitals rendered vacant by decanting their normal population.

Tuberculosis Schemes; Maternity Homes

Many tuberculosis schemes, again, are examples of attempts by small authorities beyond their resources. A cross-section of the tuberculosis services of many medium-sized authorities would give an untidy picture. Some, for instance, provide treatment in their institutions for both early and late cases, surgical and non-surgical; other retain only the hopeless and chronic patients and contract out with other authorities for the sanatorium care of cases of clinical interest, with the result that the tuberculosis officer, who is also probably concerned with school medical and child welfare services, is cut off from

* PUBLIC HEALTH, June, 1944.

experience of modern methods of tuberculosis therapy, although his ambition may have been to obtain a senior appointment in the tuberculosis service.

In my own area, as the in-patient provision under the tuberculosis scheme was open to criticism, I was directed some ten years ago to sound neighbouring colleagues in areas of similar type to Blackburn with a view to the joint provision of a sanatorium. Those who were approached, however, expressed satisfaction with their own arrangements, and our efforts to improve matters were abortive until, following negotiations with my friend, Dr. Lissant Cox, the Blackburn tuberculosis scheme was combined recently with the highly efficient Lancashire County Council service. In view of the deficiencies of many tuberculosis schemes it is surprising how few authorities have availed themselves of the powers provided under the Local Government Act, 1933, and the Public Health Act, 1936, whereby this important service might be administered, by agreement, by a larger authority.

Another instance of ill-advised planning is furnished by the number of small municipally owned maternity homes. At the end of the last war some progressive authorities purchased and converted large private residences for this purpose. The arrangements were often of a temporary and experimental nature and designed to assess the local demand for in-patient maternity accommodation. Many of these homes were the germ of efficient maternity units in the form of annexes to existing general hospitals or of well-planned extensions built around the original home. But what was originally an experiment by a few pioneer authorities became a vogue, so that now there are many adapted buildings whose chief claim to be called maternity homes is that they provide accommodation whereby the harassed housewife may undergo confinement in comfortable surroundings and without the domestic upheaval which home confinement entails. Many of them are unsuitable, by reason of structural and staffing deficiencies, to deal with major obstetric abnormalities and some even to provide effective isolation and observation accommodation. Any regional maternity scheme will effect the disappearance of such places for lying-in purposes, although the best of them might continue to serve as annexes for the reception of ante- and post-natal cases.

Alternatives

On the whole, the nation's health and hospital services are good, but their rational development has been restricted by local boundaries and inter-service rivalries. They have arisen by a process of haphazard evolution. To set things right some reform of our existing system of local government is needed. One policy which has its advocates is the division of the country into large areas, each under the direct control of a Government representative. Such a method, smelling of dictatorship, is so alien to our democratic ideals that it is scarcely likely to come about. Another alternative is the division of the country into health regions somewhat on the lines of those advocated by the Sankey Commission for the purpose of voluntary hospital co-ordination. A third view is expressed by Sir Arthur MacNalty*, who favours the division of the country into areas comprising counties or aggregations of counties with their contained county boroughs and an interchange of medical resources.

Probably the type of reform most acceptable to us is that recommended by the Society of Medical Officers of Health in their report on a National Health Service, which advocated the setting up of new democratically elected local authorities for areas of a size sufficiently large to administer all local government services, including health services. A rationalisation of central administration was also recommended, all the medical services at present administered by other Government departments to be merged in a new Ministry of Health, and it was emphasised that, hospitals being an integral part of health services, the creation of *ad hoc* bodies for hospital administration would add to the confusion.

The White Paper on a National Health Service, whilst

* "The Reform of the Public Health Services." A report to the Local Government Sub-committee of the Nuffield College Social Reconstruction Survey.

aiming at a comprehensive service free to all, contains no proposals to effect that unity without which a comprehensive service will be impossible. At the centre it leaves the various Government departments, including the new Ministry of Education, with their existing health functions. Further, when the Government's recently published social security proposals become operative, yet another Ministry will administer many services which are largely of a health nature. At the periphery the creation of yet another statutory body—the joint authority—will further complicate the local government system. This joint authority is to prepare and administer an area scheme out of a variety of services lopped off their present control. It will be composed of representatives of counties and county boroughs, but not of minor authorities. What will be the reaction of authorities called upon to contribute to the upkeep of services hitherto under their sole managership, but in the administration of which they will have no further say other than through a representation probably insufficient to voice effectively the wishes of their area? At the outset some friction must be expected between the joint authority and its constituents on the one hand, and the individual local authorities in the area on the other. Tactful and unbiased administration on the part of the joint authority will be required to secure the willing co-operation of the local government bodies which are called upon to throw into the area pool many services they have painstakingly built up. For this reason the joint authority should obviously be advised by someone schooled and widely experienced in the local government service.

Voluntary Hospitals in the New Plan

The White Paper states that without the collaboration of the voluntary hospitals it will be many years before the joint authorities can build up a system adequate for the needs of the whole population. It expresses the belief that a way can be found to create a new universal public hospital service in which voluntary hospitals can participate without losing their identity and autonomy. Obviously the voluntary hospitals cannot retain their autonomy unless they come in on terms of equal partnership. Will this be the case under the system outlined in the Government proposals? It is true that they will have representation on the Health Service Councils which advise the central and local executive bodies, but they will have no other say as to the ultimate position which they and the consultants with them—must take in the area plan. Thus they will be placed in a subservient position with loss of autonomy.

The British Hospitals Association, in a memorandum now being considered by the Minister, sets out an alternative structure. It advocates the establishment of a Central Hospital Board with equal representation of local authorities and voluntary hospitals, together with representatives of the consultant services. Locally, hospital administration would be carried out through statutory regional hospital boards, the regions being split up into divisions controlled by local hospital councils, the actual management of each hospital remaining with the individual hospital authority. The King Edward Hospital Fund for London has recently advanced proposals closely similar to those of the British Hospitals Association, and framed to give the voluntary hospitals an effective position in the planning of hospital services.

The history of our voluntary hospitals how they have developed from purely charitable foundations for the sole benefit of the poor into places now used by all classes—is well known. Their extended use, and the provision of equipment required for the more specialised forms of treatment and investigation, have placed a heavy strain upon the hospitals' resources at the very time when growing taxation has diminished the incomes of those who have supported them. In consequence they have ceased to be institutions rendering a free service to all, and have levied a charge—though this has often been nominal—on those whom they have received for treatment. At the same time they have sought other sources of income in the shape of small subscriptions and contributory schemes. The latter, said to cover more than ten million wage-earners and to produce over six and a half million pounds a year, have been of particular value to the hospitals.

It is proposed in the White Paper that the participating

hospitals shall receive per public bed an annual subsidy from the Exchequer and the rates, but that the amount thus received must not be assessed as a total reimbursement of costs incurred, the deficiency to be met from voluntary sources. But the members of contributory schemes regard their contributions as an insurance for hospital service, like the statutory levies for national health or unemployment benefit, and it is unlikely, therefore, that they will continue to subsidise through voluntary contributory schemes institutions which as ratepayers and taxpayers they are already supporting. The British Hospitals Association, in the memorandum already referred to, express concern at the proposed financial arrangements which they fear will in time dry up voluntary sources of income. Perhaps because grants from the central exchequer are more likely to pass unobserved by the mass of the public than grants from local rates, they recommend that voluntary hospitals, instead of receiving payments from local authorities, should receive the exchequer grant direct. The Beveridge report (paragraph 432) states that "the British people are clearly ready and able to pay contributions for institutional treatment," and goes on to ask whether payment for this purpose should be included in the compulsory insurance contribution and be passed on as a grant from the social insurance fund to the health departments towards the maintenance of the institutions. The Minister has stated in the House that there can be no place for voluntary contributory schemes in the Government's proposals for social insurance. This statement clearly indicated the Government's standpoint at the time. That the Government's views have not altered since is shown by their acceptance in the recently issued White Paper on Social Security of "Assumption B" of the Beveridge Report. It would seem, therefore, that, even if the financial proposals set out in the British Hospitals Association Memorandum lead to an arrangement more favourable to the continued existence of voluntary hospitals for the time being, their expectation of life is short.

Effect on Other Health Activities

The transfer of hospital services to the joint authority, particularly if voluntary hospitals come into the scheme, will provide a uniformly high standard of hospital services within each area and bring within the reach of all the particular form of hospital and specialist treatment of which they stand in need. But the divorce of local authority hospitals from their present ownership will tend to emasculate other health activities. Take the role of the county borough or county district Medical Officer of Health in the prevention of infectious disease. He receives the notifications and is responsible for organising the requisite investigations and preventive measures. These depend for their effective functioning upon a team of which he is the head. In the course of his investigations he meets from time to time doubtful cases, some of which may with safety be left at home, while others require admission to cubicle beds for observation purposes. When infectious disease is unduly prevalent cubicles are most wanted, and consequently most scarce; often they become available only as a result of a "general post" of patients and staff. Will observation beds be more readily forthcoming from joint authority hospitals than from those which the medical officer of health himself controls?

Again, the medical officer of health is frequently called out as infectious disease consultant by his practitioner colleagues. His managership of the isolation hospital provides him with wide experience in the diagnosis and treatment of infections. But under the new order of things access to the hospital and its clinical material, now his by right, may be granted to him only as a favour. This will undoubtedly deprive him of facilities to which he owes his conversance with infectious diseases and his recognition as a consultant in these conditions. One can easily foresee his difficulties. These problems may not beset the county district medical officers of health, as the White Paper indicates that many epidemiological activities at present discharged by them are to be centred upon county and county borough councils. Whether this takes place or not, it appears to me—although I know many will disagree—that the body which is to take over the isolation hospitals should with them assume responsibility for epidemiological control.

I realise that such a procedure would deprive us of a fascinating side of our work, but by rationalising an important branch of public health administration it would tend to greater efficiency.

Again, the transfer of hospitals to the joint authority cannot but have an adverse effect upon the maternity and child welfare and school medical services, many branches of which have developed as a result of an administrative unity between them and the hospitals controlled by the authority. The growth of many orthopaedic schemes, the investigation and treatment of marasmic children, the successful functioning of many cardiac clinics run in connection with the school medical and child welfare services, offer sufficient proof of this statement.

Will Unity be Achieved?

Everyone would welcome a scheme bringing uniformity to a health service which, though good, is somewhat out of joint. But it is questionable whether the structure set out in the White Paper will in fact effect unity. It is agreed that in the absence of planning over wider areas than our local government boundaries now permit a comprehensive and uniform health service is impossible. To this end the whole structure of local government stands in need of revision. The present may not be an opportune time for the purpose, and pending that opportunity some alternative should be found as a temporary expedient. A joint authority, providing it is temporary, offers a way out of the difficulty, but the number and nature of the services to be handed over the joint authorities, as well as the fact that they are to be precepting authorities, gives them an air of permanence.

That the Government is not committed to some hard and fast rectification was rather indicated by Mr. Willink's reply to a question in the House of Commons before it rose for the summer recess. He said then that no form of "regional government" was proposed, that the main features of the county and county borough system would remain unchanged, but that there was need and scope for adjustments of status, boundaries, and areas. That being so, would it not be possible, for the purpose of hospital administration and for that alone, to set up regional advisory boards, more or less on the lines of those advocated by the British Hospitals Association, empowered to prepare an area plan which it would be the statutory duty of the authorities in the area to implement, while still retaining the ownership and management of their own hospitals? It is true that such a scheme would be only a half measure and not an effective substitute for the revision of existing local government boundaries, but it would have many points to commend it. It would, for example, place at the disposal of the entire community a uniformly high standard of hospital service whilst leaving the individual medical officer the unfettered right to correlate his general health and hospital services, subject, of course, to compliance with regional requirements.

Future of the M.O.H.

Finally, what of the medical officer himself? What part is he to play in all this reconstruction? He is given only eight and a half lines in the White Paper on a National Health Service, but Mr. Willink, addressing the Society of Medical Officers of Health in the early summer of 1944, painted a horizon—necessarily rather a misty one—of new opportunity. He said that there would be immense additions to the scale and importance of the work of medical officers of health in consequence of the Government proposals, and he added, "The planning of health services in these (joint) areas, in consultation with the constituent local authorities and with professional and with voluntary hospital experts, will be a business calling for high gifts."

Will medical officers of health necessarily rank as advisers to the proposed new authorities? It is axiomatic that the larger the area, population, and resources which an authority covers, the more it must rely upon expert advice. A rural district may possibly dispense with it altogether; a county or county borough never. Certain services set out in the White Paper will, if the proposals go through, be taken out of the hands of medical officers of health. What is to be the

future sphere of service of these highly trained and experienced men and women? Their training and experience are both clinical and administrative; they know intimately the local conditions of their own and probably of adjoining areas, and at the same time their qualification in State medicine enables them to take the wider view; their work has compelled them to exercise foresight, a facility for adjustment, and a spirit of accommodation. It is hardly to be supposed that such a body of public servants will go unwanted in the greatest readjustment of public health administration which this country has ever known.

The White Paper purposely omitted any detailed consideration of specialist and consultant services until the Committee on Medical Schools had reported. If there is to be an appendix to the White Paper dealing with such services, it should certainly include the functions proposed for medical officers of health, who are specialists and consultants in the exact meaning of the words.

A COMPARISON OF THE RATIONING SYSTEMS IN GERMANY AND THE UNITED KINGDOM

By C. FRASER BROCKINGTON, M.D., D.P.H.,
County M.O.H. to Warwickshire C.C.

There are difficulties to be overcome in making a comparison between the diets of two countries, especially in war-time. The extent and influence of the Black Market cannot easily be gauged. Unlike Russia, where at least a part of this traffic has been legalised to permit collective farmers to dispose of their share of the harvest, any food obtained other than through the proper channels is in the U.K. and Germany wholly illegal, and it therefore introduces a perplexing factor in all calculations. The effect of differential rationing, so highly developed in Germany (if not as high as in Sweden, where 50 consumer categories exist), is not easy to assess. The degree to which legal rations are honoured and to which they are within the purchasing power of poorer members of the community must vary from country to country, and the extent of the privileges of certain classes like the farmer will vary. Foods have developed a habit of changing in quality while retaining the same description: wheat extraction, fat reduction in meat and milk, the addition of barley, oats and potatoes to flour, and the failure to remove refuse from meat, are examples of such. The common yardstick—the calorie—is itself a source of error, for this overworked gauge of human consumption almost wholly ignores the presence or absence of essential nutrients, apart from the fact that calorie requirements must be less in hot countries or where the stature is lower.

Some of the Unknowns

Some difficulties are common to all countries. What are the true needs in protein and fat we must confess we do not know. We know that in the last resort protein must take second place to calories, so that when the calorie content of the diet is too low protein will be used as fuel and loses its true function. We know that protein needs must be greater in children but are ignorant of the extent. We know that correct mixing of animal and vegetable proteins steps up the value of the vegetable fraction, and that the relationship of protein foods to energy foods in the diet may be more important than the exact amount of each, so that a child may grow more with less animal food.¹ There are mysteries about fat requirements. Why does lack of fat give rise to hidden hunger, so that in the last war the boys in Christ's Hospital, Horsham, avidly ate all fat scraps, and men in Arctic regions remain hungry after eating unlimited quantities of fat-starved animals? The estimate of national requirements of protein and fat can be stated only roughly as 5 to 10% and 30% respectively of calorie intake. Fat in the diet is difficult to estimate on account of the amount present in milk, cheese, and meat,² and "fat issued as such" may be only two-thirds of the total of the diet. Finally, the position with regard to vitamins and minerals can never be elucidated with any certainty and must vary greatly in different regions and

different sections of the community. For example, vitamin C is naturally more available to the country dweller. It is alarming to think that the fog which enshrouds the B complex vitamins should at this juncture be still further thickened by talk of variable biosynthesis in different individuals. The extent of the problems yet to be solved is illustrated by the recent elucidation of the activities of phytic acid, which inhibits calcium absorption and renders some degree of abstraction of wheat or alternatively chalk fortification necessary to prevent widespread rickets.³

Rationing Systems Compared

Germany and the U.K. systems of rationing have little in common. Germany adopted the 100% method of "specific rationing," which permits little flexibility⁴ and makes it necessary to give differential rations. There are three main categories in Germany—the light, heavy, and very heavy workers; this rigid form has no doubt been forced upon her by the cessation of overseas imports, not forgetting her ability prior to the liberation of occupied territories to draw upon a wide area of Europe.⁵ The U.K. adopted the 50% method, with calories *ad lib.* through unrationed bread and potatoes and meals "off the ration" in canteens and restaurants.⁶ Our flexible system, with rationing limited mainly to protein, milk, and fats, depends to some extent upon continued overseas imports, our main concern being to conserve shipping. Extensive price control of basic commodities has contributed greatly to the success, and priority distribution and the point system have also assisted the flow of foods into the right channels. Considering the difficulties in ensuring supplies to an island, the U.K. can be satisfied to have got away with such a limited restriction on food.⁷

Both countries have been obliged to change the animal-vegetable ratio: each animal calorie requires for its production on the average seven primary calories (eggs 18), and in peace-time the national diet could theoretically have three times the number of calories (9,000) if entirely composed of vegetable matter. The animal-vegetable ratio in Germany fell from a peace-time level of about 66/34 to 77/23, and would have been lower but for the importation of animal products from occupied lands.⁸ There are difficulties in the policy of increasing the use of primary calories which impose a limit—e.g., the loss of animal manures can be serious and much land may be unsuited to crops. The U.K. has benefited from the ability of the U.S.A. and Canada to concentrate on increasing animal foods. The U.S.A. has increased production of sheep, cattle, pigs, poultry, eggs and milk by 31%, and the pork export from Canada has nearly doubled. Export "lease-lend" of animal foods has been raised from 2% in 1941 to 10% in 1943; to make this possible wheat acres have been cut down.⁹ Although this must have had a powerful effect upon the animal-vegetable ration in the U.K., there does not seem to be any reliable estimate of it, but in general it may be said that it is almost certainly below the higher ratio of 60/40 which prevailed before the war.

In the result the calorie rations for the normal consumer in Germany have been maintained at between 1,600 and 2,000 a day; the excellent harvest in 1943 and the increasing use of primary calories raised the figure from 1,625 in 1942 to 1,930 in 1943. The average diet is better than that of the normal consumer owing to the privileged rations of young children and heavy workers—e.g., infants under one year of age have two and a half times the allowance of the League of Nations scale, and light workers get 2,285, heavy 2,685, and very heavy 3,425 calories a day; in consequence the average diet is estimated at 2,110 and the consumption unit for the normal family is only slightly less than 3,000 calories a day. It is difficult to make any definite comparative estimate for England, where the flexible rationing system permits an unlimited consumption of calories if there is money to buy them. It is generally considered that the average diet is at or about 3,000 calories, and if this is comparable with the consumption unit of a normal German family there is little difference between the two countries in the matter of calories.

Both countries (in common with most of the rest of the

world)¹⁰ have increased milk consumption. The percentage of milk in the total protein has increased in Germany from 40 to 67, and in the U.K. from 23 to 39. The very much higher percentage in Germany is not a little surprising. The U.K. has had the advantage over Germany in being able to import the dried article from America. Nevertheless, supplies in Germany appear to equal or exceed those of the U.K. The daily calories per consumption unit derived from milk have been increased in Germany from 285 pre-war to 330 in 1943. The ration for children under 3 years is 750 grammes compared with 570 in this country¹¹; over 3 years the figures are roughly the same—500/570 respectively at age 3-6; 250/285 respectively at age 6-14. England has taken a further important step to make milk available to priority classes irrespective of purchasing power by schemes to provide it at cheap rates in schools and at 2d. a pint at home to all children under five or free to necessitous cases.

The fat ration in Germany provides 300 calories per consumption unit, and the total amount, taking into consideration fat and other foods, is likely to be of the order of 500 calories, rather less than 700, which might be optimum on a 2,100 calorie diet. This allowance is very similar to our own.

It is quite impossible to determine the position with regard to the individual nutrients of the diet, but it is probable that in Germany supplies of vitamins A and D have been maintained in this war, unlike the last, by reason of the increase in milk, the maintaining of fats, the fortification of margarine, the increase in vegetables, and the use of synthetic tablets for children. The position with regard to other vitamins is probably not dissimilar. Vitamin C tablets are distributed to children in Germany. In England vitamin A and D tablets are similarly given to priority classes, and with the increase in milk and the fortification of margarine, etc., it is probable that the general position is very similar to that in Germany.

The 1943 achievement of Germany must be considered remarkable, yet there are indications (other than from the loss of occupied territory suffered since that date) that it could not continue. Agricultural production was steadily declining on the Continent, both cereal and animal, up to 1943, and the total consumption in Europe had fallen to two-thirds, the loss in cereals being masked by a greater use of primary calories. The favourable crops which had largely determined the increase of bread ration in Europe in 1943 are unlikely to be repeated, since there is a shortage of fertilisers, draught-power, and man-power, and the supply of nitrates in agriculture had fallen to half in 1943. A similar situation resulted at the same period during the war of 1914-18 with inevitable consequences. In comparison with these the U.K. has doubled its production and grew two-thirds of its total requirements in 1943, compared with one-third in 1938. Agriculture in England is now the most highly mechanised in the world, and tractors had nearly trebled (at 150,000 in 1942) the pre-war figure of 55,000. There seems little reason to fear a similar decline in the U.K.

Effect of Rationing on Health

It is not easy to assess the results in terms of health in both countries. There are no indices of health, and at the best we can do little more than compare death-rates and assess the relative absence of disease. In the case of two nations at war it is not easy to accomplish even this. Death figures cannot be interpreted without due regard to their limitations. Certain diseases are normally subject to wide fluctuation and others—e.g., diabetes—benefit naturally from war, and the effects of limited diets are likely to be delayed and show themselves in mortality rates in the years after the war. The general death-rate, both in Germany and the U.K. has increased slightly (U.K. figure for 1938 was 11.6 per thousand, and for 1943 12.1 per thousand). Birth-rates have declined between 1939 and 1943 in Germany from 20.4 to 14.9, whereas they have increased in England from 15.1 in 1938 to 16.5 in 1943. This difference in the birth-rates must influence the meaning of the death-rates; fewer births mean fewer neonatal deaths, and vice versa, so that the apparent differences in the two countries are in reality greater. Infant deaths in Germany rose from 60 to 66 while they declined in England from 53 in 1938 to 49 in 1943. The evidence with regard to diseases

thought to be affected by diet is even more slender. There are no reliable figures for tuberculosis in Germany; there appears to have been an increase, but probably not equal to that in many occupied countries.¹² There has been a slight increase in England with the exception of tuberculous meningitis, which showed a relative increase of 50% in 1943. Other infectious fevers appear to have increased on the Continent, although we have no certainty of the position in Germany, whereas they have declined in England.¹³ Information as to growth figures would be of considerable value, but it is unfortunate that we have no reliable figures for either Germany or the U.K.¹⁴

Germany can thus be seen to have maintained up to 1943 a reasonably high standard of diet in which the main deficiency in comparison with the U.K. is in animal protein. There is evidence to suggest that a progressive decline after 1943 would be inevitable. As to a comparison of the effects of the diet upon the health of the two countries little can be said owing to paucity of evidence from inside Germany. It is, however, to be doubted whether Germany has maintained quite the same favourable picture as ourselves.

NOTES

I have drawn freely upon the publication of the League of Nations *Food Rationing and Supply*, 1943/1944, for information in this article.

¹ Brockington, C. F. (1939). *PUBLIC HEALTH*, 52, 209.

² Recent analysis of meat places the hidden fat content much higher than was previously supposed. Fat visible microscopically between fibres may amount to as much as 70%, and this possibly accounts for the demand of manual workers for meat. (Personal communication from Bate Smith, E. C.)

³ The effects of completely unextracted flour in Ireland in producing widespread rickets has recently been shown to be disastrous.

⁴ Switzerland has introduced some flexibility into the same system by allowing a choice of two series of foods based on a greater quantity for less quality and by permitting some interchange of coupons.

⁵ It is of interest that Germany exported pulses, potatoes and sugar to Greece.

⁶ At the end of 1942 there were 1,800 British Restaurants, and all industrial concerns with more than 250 workers have been obliged to establish canteens—giving twice the meat ration to heavy workers and one and a half to ordinary workers. School authorities with varying success were being encouraged to give up to 75% of children midday meals in schools.

⁷ Even the U.S.A. has had to submit to some rationing, through the need to restrict the use of some articles for varying times and reasons—e.g., canned foods, to lessen the burden in the canning industry.

⁸ Compare Poland, 9,010.

⁹ In Canada, wheat acres have been cut from 29 million in 1940 to 17½ millions in 1943. This has been done by increasing the provision of feeding grains and oleaginous plants; the surplus wheat has been used for feeding the animals and also to make alcohol for rubber production. In the Argentine wheat has been used as a fuel.

¹⁰ The increase in milk production throughout most countries despite the need to plough up more and more grassland has been one of the most outstanding nutritional advances of this war. Milk production in Switzerland has been doubled where the proportion of milk protein to total protein has increased from 30 to 56; similarly in Sweden the production has greatly increased and the percentage raised from 47 to 60.

¹¹ This higher ration in the early years is common to most other European countries; in Finland children under one year get 1,000 grammes.

¹² Advanced cases in Belgium, December, 1941, 70,000; February, 1943, 110,000. Mortality in France had risen by 50% during 1943.

¹³ Diphtheria markedly increased in Norway and Holland; malaria, catastrophically in Greece.

¹⁴ Retarded growth in children has been shown in Belgium and France and is probably general for occupied countries.

The British Electrical Development Association, 2, Savoy Hill, London, W.C.2, have issued a compact folder containing plans for suggested kitchen arrangements in "low-cost post-war homes." No idea of the cost of fitting such kitchens is given, but perhaps in view of fluctuating prices this was not possible. Four types of kitchen are laid out—the first a room for washing, cooking and eating combined; the second a washing and cooking room; the third a cooking and eating room; and the fourth a cooking room only. The plans of these rooms are shown in ideal relation to the house or flat as a whole.

BOOK REVIEWS

A Guide for the Tuberculous Patient. By G. S. Erwin, M.D. London: Wm. Heinemann Medical Books. 1944. Pp. 115. Price 3s. 6d.

It is one of the most necessary and often one of the most difficult things for a tuberculous person to realise that, even when his disease has become quiescent or arrested, it is still with him, and that he must live carefully for many years. This is the theme of Dr. Erwin's book, and he is wise to stress it, though perhaps the statement "the complete healing of secondary tuberculosis is so rare an event that no patient can count on achieving it," may cause some alarm and despondency. The book explains the nature of the disease, how to prevent its spread, and the rationale of its treatment, both institutional and domiciliary. The advice given is sound, the method of presentation is clear, and the minimum of technical terms is used. The book would lose little of its value if Chapters 8 and 9 were omitted, and a handbook of this kind scarcely requires an index. The writer's aim is surely to disseminate his advice as widely as possible, and this shortening of the book would reduce its admittedly modest cost so as to bring it within reach of more of the poorer patients. The only real exception which can be taken to this otherwise excellent book is the scanty notice given to the family doctor, who is first of all the patient's personal medical adviser, and the essential link between him and the tuberculosis service.

Brompton Hospital Reports, 1943. From Secretary, Hospital for Consumption, Brompton, London, S.W.3. Vol. 12. Pp. 183. Price 8s. 7d. post free.

This volume maintains the high standard of its predecessors. The opening article is by A. Margaret C. Macpherson on childhood infection and its relation to adolescent and adult pulmonary tuberculosis. This is a report of the hospital research department on work covering the past 14 years. The importance of exposure to infection in childhood is stressed. An account of Mantoux and x-ray surveys is given, and the discovery of symptomless adolescent cases is discussed. The conclusion that the extensive use of artificial pneumothorax is the most satisfactory way of dealing with these cases will not meet with universal acceptance. Many tuberculosis officers will prefer to keep such cases under close supervision and advise artificial pneumothorax if and when evidence of spread appears. This can be done with a high degree of safety, and ensures that the not unlimited facilities for artificial pneumothorax shall be used where most necessary. An article on traumatic haemothorax, by A. Tudor Edwards, gives a clear account of the modern methods of dealing with this complication of chest injuries. Two papers on thoracoplasty by C. Price Thomas and W. P. Cleland give between them a full account of the rationale and indications for thoracoplasty, in the treatment of pulmonary tuberculosis, together with a most detailed and excellently illustrated description of the medical, surgical and nursing technique of this operation as now performed. Discussing the treatment of tuberculous empyema, R. C. Brock is too severe in his criticism of any form of treatment short of thoracoplasty. Perhaps this is because the surgeon tends to see only those patients in whom less radical methods have failed. Most tuberculosis workers must have known many cases of uncomplicated tuberculous empyema which resolved after aspiration, either with or without lavage. Where, however, the condition is complicated by active homolateral pulmonary disease or secondary infection the situation is different, and here thoracoplasty is not only the method of choice but in fact the only form of treatment which holds out any reasonable hope. The article on the use of silver nitrate in the production of aseptic obliterative pleuritis, by R. C. Brock, will be useful to those who wish to produce pleural adhesions, either in the treatment of recurrent spontaneous pneumothorax or as a pre-operative measure. A paper on the study of the bronchi, by A. F. Foster-Carter, is a scholarly and well-illustrated account of the anatomy of the bronchial tree. Discussing the place of miniature radiography in the diagnosis of diseases of the chest, W. D. W. Brooks analyses the results of 167,000 examinations on Royal

Navy personnel, and stresses the importance of the number of symptomless infectious cases found, especially in the higher age groups. R. C. Wingfield's paper on the control of tuberculous infection sets forth a long-term national policy which is worthy of the careful consideration of all who know the seriousness of the present situation.

A. Hope Gosse contributes a statistical survey of mortality and morbidity among doctors, with special reference to coronary thrombosis.

Clifford Hoyle and J. V. Dacie give an account of malignant adenomatosis (alveolar cell tumour) of the lung.

Clifford Hoyle and N. R. Barrett, describing a case of haemoptysis, show that things are not always what they seem. A paper headed "A Problem in Diagnosis and Treatment," by Maurice Davidson, R. C. Brock, and Stanley Marshall, illustrates the difficulty in distinguishing between chronic lung abscess and carcinoma.

Included in this volume are statistical tables of Brompton Hospital work for the years 1939-42: Index of Authors, Volumes 1-12; Index to Volumes 1-11; and Index to Volume 12.

The Social Background of the Venereal Diseases. With a foreword by Sir W. Wilson Jameson, K.C.B., M.A., M.D., F.R.C.P. Report by the Tyneside Scheme in Venereal Disease Control on an Experiment in Contact Tracing and an Investigation into Social Conditions. 1944. No price given. Pp. 19.

For every person suffering from gonorrhoea or syphilis there is another somewhere from whom the disease has been contracted, and it is possible that there is a third to whom it has been passed on before the original patient realised he or she had been infected. Up till recently, apart from educative measures, attempts in this country to control the spread of these diseases were limited to providing facilities for the treatment of sufferers. Regulation 33B of 1942 was one attempt to eradicate sources of infection. In the United States the procedure known as "contact tracing" has been employed for years, the object being to bring under medical supervision the contacts of known cases. Last year the first attempt on these lines in this country was made by the combined action of a number of authorities in the northern counties. The very successful results are recorded in a pamphlet entitled *The Social Background of the Venereal Diseases*, prepared by the Liaison Officer of the Tyneside Contact Tracing Scheme, Miss Johns of the White House, Granger Park Road, Newcastle-upon-Tyne, who is willing to give further information to enquirers, who might also approach the Medical Officers of Health of the Counties of Durham and Northumberland or of the County Boroughs of Gateshead, Newcastle-upon-Tyne, Tynemouth and South Shields.

Aspects of Hospital Reform. Some notes by NORAH F. GRENTED. Foreword by HOWARD E. COLLIER, M.C., M.D., C.B.E. October, 1944. No price given.

Some people fear that the sheer size of the proposed large hospital units controlled by authorities governing areas of immense population will eliminate local personal touch and interest. That such failings exist even to-day in certain institutions is the subject of a pamphlet, *Aspects of Hospital Reform*, prepared by Mrs. Grensted (from whom a limited number of copies may be had on application to her at 32, Charlbury Road, Oxford), based on her experience both as a patient and as a trained social worker. She criticises particularly the long periods of waiting to which those attending the out-patient departments are subjected, the lack of appreciation by the staff of the patients' reactions to being admitted into a hospital at all; and she makes a convincing case for the employment, particularly on mental nursing, of adult women: an interesting pamphlet and one written from full knowledge.

Dr. R. A. Young, C.B.E., Consulting Physician to the Middlesex and Brompton Hospitals, has been elected Vice-Chairman of the National Association for the Prevention of Tuberculosis, in place of Sir Percival Horton-Smith-Hartley, who has retired on grounds of ill-health.

CORRESPONDENCE

To the Editor of PUBLIC HEALTH.

THE FUTURE OF THE SCHOOL MEDICAL OFFICER.

SIR,—May I put forward some suggestions arising out of Dr. Lishman's interesting paper in the December issue (p.35) on this subject. I agree with him that there is much to be said in favour of the periodic examination of school children being done in the schools, but we should also consider the desirability of examining children in family groups. This has the following advantages.

First, examination of family groups is more economical in the sense that, where, say, three or four children are concerned, a single enquiry into family health and the domestic background will suffice for them all; otherwise this enquiry has to be made and recorded three or four times on different occasions. The saving would be not merely in clerical work but also in thinking: the doctor would interview one parent and would have one family situation in his mind for the several examinations at once. And, as Dr. Lishman will agree, the domestic and family enquiry needs to be more searching than heretofore.

Secondly, it is much better value to the mother to have the health problems of all her children reviewed at one consultation. It so often happens that advice and health-building treatment (such as U.V.R., diet, sleep, relief of crowding in the home, convalescence, etc.), may apply to several of the children at once. Again, knowledge of the health of one child may be useful in leading the doctor to take more serious notice of ailments in a brother or sister. In this way a family condition is dealt with instead of that of an individual only—again a saving in medical thinking. In other words, several children are more effectively dealt with in less time.

Thirdly, there is greatly enhanced interest to the doctor in family examinations. One can learn much from the resemblances and the differences in physique and function of different members of the group. We now accept the family as the social unit, and social medicine is recognising the importance of the sociological background; should we not, therefore, apply this principle more effectively in our school medical examinations? The only question is whether family examinations can be integrated with school organisation. I believe they can; and the parents would jump at it. Anything that has ever been said in favour of the "family doctor" applies here.

Again, I suggest that the school medical service need not surrender wholesale all responsibility for treatment. It might well retain U.V.R., postural orthopaedics, convalescent treatment (considered perhaps as a branch of open-air schools), and possibly other health-building developments. So much of this general treatment can be linked up with physical training and with education of the child in the practice of health.—I am, etc., Birmingham. E. H. WILKINS.

To the Editor of PUBLIC HEALTH.

PROBLEM FAMILIES.

SIR, I was glad to see in his letter on this very interesting and important subject that Dr. Fraser Brockington regarded the integrity of the family as of paramount importance and not to be broken wantonly for the alleged social benefit of the children. While there is no doubt a minority of cases where ill-will is the cause of the trouble and where removal of the children from parental control and influence is necessary for their welfare, the making of such a decision should demand hardly less thought than a death sentence, to which, by its interference with normal human rights, it is analogous. For all other problem families the aim should be to strengthen their already weakened links.

To enunciate a general principle is much easier than to apply it, and I cannot help feeling that the colony of problem families suggested by Dr. Brockington, whether large or small, would create its own difficulties. Such a colony might easily become less a means of remedy than a cell within the community of anti-social thought and action, since the families removed there by order of the Court would be branded in their own and their neighbours' eyes as persons of inferior citizenship and would associate with others similarly stigmatised. "They have given us a bad name, we will live up to it."

It would seem to me that while the responsible Authority should exercise a careful and educative oversight of the families concerned in a satisfactory environment provided by itself, the supervision should be as unobtrusive as possible and certainly free from any sort of publicity. Far from the establishment of a colony, the dispersal of problem families as widely as possible among a population of an average standard of behaviour higher than their own would seem to be the method of choice. But before plans are drawn up to deal with the matter, do we not need to know more about it? What, for instance, is the relative importance of

economic and personal factors? What, in each particular family, are the influences, personal contacts, membership of churches, societies, parties, clubs, groups and gangs, making for integration and for disintegration, and how most effectively can the beneficial be encouraged and the malign countered? These last questions would have a bearing upon the indications for removal of a family to a new environment, and they would also throw light upon wider means of prevention and treatment, for the problem extends beyond the scope of the local welfare authority, or even of the responsibility of the State, involving as it does co-operation with all agencies whose aim is the "wholeness" of the human personality.

Here in Ramsgate I have discussed with my health visitors the possibility of undertaking an investigation of unsatisfactory households, but in present circumstances we are all, unfortunately, too busy with routine duties to be able to spare the time for extras. Nevertheless, I live in hopes of pursuing the latter when opportunity offers, since a smaller authority, perhaps, lends itself more suitably to pioneer studies of this sort than does a larger one.—I am, etc.,

J. V. WALKER,
Medical Officer of Health.

Ramsgate.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

A meeting of the Council was held on Nov. 17, 1944, at the London School of Hygiene and Tropical Medicine.

The President (Prof. R. M. F. Picken) was in the chair, and there were present: Sir Wilson Jameson, Sir Alexander Macgregor, Drs. Cyril Banks, N. D. Begg, G. F. Bramley, J. J. Buchan, J. A. Charles, G. Lissant Cox, Jas. Fenton, Jas. Ferguson, J. M. Gibson, F. Gray, F. Hall, A. S. Hebblethwaite, C. Herington, J. W. Hunter, J. Johnstone Jervis, R. H. H. Jolly, M. Manson, A. Massey, A. A. E. Newth, T. Orr, R. H. Parry, H. Paul, W. R. Ramsay, Virginia Saunders-Jacobs, J. E. Spence, J. A. Stirling, W. Stott, J. A. Struthers, Mr. A. Gordon Taylor, Drs. G. McKim Thomas, H. C. Maurice Williams, J. Greenwood Wilson and F. T. H. Wood.

Apologies for absence were received from Sir Allen Daley, Drs. E. A. Gregg, H. G. Trayer, J. A. Scott, W. M. Frazer, G. V. T. McMichael and G. F. Buchan.

The minutes of the Council meeting held on Sept. 29, 1944, were approved and signed.

Proposed Revision of Scale of Salaries.—Dr. Arthur Massey submitted the draft recommendations of the Salaries Committee for the revision of the Askwith Scale of Salaries. After general expression of approval it was agreed that the draft should be circulated to all Branches and Groups of the Society inviting them to forward any amendments, comments or observations for consideration by the Salaries Committee not later than Jan. 15. It was also agreed that the Salaries Committee should submit a further report to the February meeting of Council.

Training of Health Visitors.—The report of the Committee on the Training of Health Visitors was submitted by Dr. R. H. H. Jolly. It was pointed out that this matter was under consideration by a sub-committee of the Nursing Reconstruction Committee, and that the Ministry of Health had agreed that the present course of training for the health visitors examination should be extended forthwith to one of nine months. Dr. Jolly added that his Committee had had an opportunity of studying draft syllabuses for this extended course submitted (a) by the Joint Consultative Council of Institutions recognised by the Minister of Health for the training of health visitors, and (b) by the Public Health Section of the Royal College of Nursing. The Committee's recommendations were:

- (1) That the possession of the health visitor's certificate shall be obligatory on all public health nurses. (A public health nurse is defined as a trained nurse, other than a midwife or a district nurse, whose duties include routine or regular visits to the homes of the people—e.g. health visitor, school nurse, tuberculosis visitor.)
- (2) That the introduction of the extended syllabus of training should be deferred until the termination of the war.
- (3) That all public health visitors should have practical experience of work in a rural district as well as in a town or urban district.
- (4) That the Society prefers the draft syllabus submitted by the College of Nursing, as amended by them, to that put forward by the Joint Consultative Council.

The above recommendations were approved and adopted by the Council, for submission to the Ministry of Health, the Royal Sanitary Institute and the Royal College of Nursing.

The President expressed the thanks of the Council to Dr. Jolly and the Committee for their services in connection with this report.

Sanitary Officers Regulations, 1935.—A resolution from the Yorkshire Branch in reference to para. 1 of Art. 27 of the Sanitary Officers Regulations, 1935, with other communications in the same connection, were referred for early consideration by the General Purposes Committee.

Housing for the Old.—The following resolution forwarded by the National Council of Women of Gt. Britain was approved and adopted:

"The N.C.W. having regard to the desperate plight of many old and infirm persons, who can obtain neither domestic help, home nursing nor nursing homes at a moderate cost, and believing that the growing proportion of old people in the population and the smaller families of the present younger generation will increase the problem after the war, urges the Government and Local Authorities to: (a) Include in all housing schemes provision for the old in the form of bungalow group and/or blocks of flats where any necessary domestic help, communal dining facilities and emergency nursing help should be provided by the appropriate authority, such accommodation to be made available for persons of all income groups. (b) Ensure that Employment Exchanges and other recognised agencies should make special endeavours to supply domestic help for the aged and infirm; and to inaugurate schemes to provide homes of rest for elderly people with adequate and skilled attendance in case of sickness."

A further resolution in reference to Maternity and Child Welfare services under the proposed National Health Scheme was referred for consideration and reports by the M. & C.W. and School Medical Groups of the Society.

Acting Hon. Treasurer.—Dr. James Fenton was elected to act as Hon. Treasurer of the Society during the absence of Dr. G. F. Buchan on national service in Canada.

Committees for Session 1944-45.—Vacancies created on the General Purposes Committee by the retirement of Drs. J. A. Charles, J. S. Anderson, G. Lilico and T. N. V. Potts were filled by the election of Dr. N. D. Begg, Dr. W. M. Frazer, Dr. A. Massey, Dr. A. A. E. Newth and Dr. Greenwood Wilson. It was agreed to invite the Association of County Medical Officers of Health to nominate one of their number for election to this Committee.

The Journal Committee, the Committee on Post-Graduate Education in Public Health, the Salaries Committee and the Committee on the Training of Health Visitors were re-elected without change of membership.

Annual Report of Council, 1943-44.—The annual report of the Council was approved for submission to the Annual General Meeting (PUBLIC HEALTH, Nov., 1944).

Representation of the Society for the Session 1944-45.—Dr. John M. Gibson was elected to represent the Society on the Royal Sanitary Institute and Sanitary Inspectors Examination Joint Board in place of Dr. G. Lilico, resigned for service with U.N.R.R.A. Other elections were: To Court of Governors, London School of Hygiene—Dr. J. J. Buchan; to National Milk Publicity Council—Dr. Thomas Orr.

Fully-Paid Life Members.—The following were elected to fully-paid life membership of the Society under Article 12: on nomination of Welsh Branch, Dr. E. Colston Williams; on nomination of Metropolitan Branch, Drs. V. E. M. Bennett, J. T. Crowe and H. R. Kidner.

The meeting closed with a cordial vote of thanks to Dr. R. H. H. Jolly for his admirable services as President and Chairman of Council during the past year.

BRANCH AND GROUP MEETINGS

SCHOOL MEDICAL SERVICE GROUP

President: Dr. J. D. Kershaw (Accrington).

Hon. Secretary: Dr. A. A. E. Newth (Nottingham).

The School Medical Service Group held its Annual General Meeting on Nov. 3, 1944, in London. About 100 members and guests were present.

In the unavoidable absence of Mr. Butler, the Minister of Education, his place was taken by Mr. Chuter Ede, M.P. The meeting was welcomed by Alderman I. Aubertin in a few well-chosen words. The Acting President, Dr. J. D. Kershaw, introducing the guest speakers, Mr. Chuter Ede and Sir Wilson Jameson, reminded the meeting that the valuable work which the School Medical Service had done had received less recognition than it deserved, and that the School Medical Officer's status was still regarded as inferior to that of the Public Health Officer. He hoped that something would be done to make the service attractive, and that the Ministry of Education really intended to develop the service to its fullest extent and to realise its potential value as a means of producing positive health. He expressed

concern about the future of the School Medical Service of the present Part III authorities, whose pioneer spirit he did not wish to see extinguished.

Mr. Chuter Ede, then spoke in the place of the Minister for Education. His speech was published in full in the November issue of PUBLIC HEALTH.

SIR W. JAMESON ON THE SCHOOL SERVICE.

Sir Wilson Jameson, C.M.O. in the Ministry of Health and the Ministry of Education, said that one of the most important proposals in the Government's White Paper on a National Health Service was that everyone should be entitled to the services of a family doctor. It was also suggested that the family doctor should be given the opportunity, if he had sufficiently prepared himself for the task, of undertaking some of the work often now being done by whole-time members of the school medical service. As medical treatment would be made available to everyone under the national scheme, care would have to be taken to avoid duplication of treatment facilities; consequently, at least some of the treatment now provided by the school medical service would in the course of time be offered as part of the scheme for the general population. It was obvious that such changes would take place only gradually, and that for some time to come the school medical service would continue to operate as usual. The service would always require a number of whole-time officers, and would provide interesting work for men and women of ability. Training should be that of a paediatrician and not that of a person ultimately seeking administrative work. The postgraduate qualifications required should be more on the lines of an improved Diploma in Child Health in conjunction with a higher general medical qualification such as M.D. or M.R.C.P. There was a movement on foot to separate obstetrical work from child care and to entrust the latter to an officer who would concern himself with the child from its earliest days till it reached school-leaving age. This continuity of care was obviously desirable. There was much to be said for the association of child care medical officers with the work of children's hospitals or departments.

Sir Wilson thought that many doctors now undertaking whole-time school medical work found themselves in a blind alley. If we were to train or recruit men and women of high professional standing, they should be regarded as specialists and should be remunerated accordingly.

Medical officers of Part III education authorities, Sir Wilson continued, were naturally concerned about their future. The Education Act, 1944, showed clearly the trend of opinion about the administration of extensive technical services. The White Paper on a National Health Service pointed in the same direction. These services would inevitably have to be administered over areas of greater population, possessing greater resources than in the past, subject to such delegation of functions as would help to retain local interest and local initiative. Rigid standardisation was to be avoided. It followed that in the larger municipal boroughs and urban districts (the "Excepted Districts") the M.O.H. would, so far as the child was concerned, be acting as a county official. There would be no need for loss of dignity or status in such a change. It was hoped that the county M.O.s.H. would confer with their Part III colleagues and evolve a scheme of administration in which the idea of partnership would predominate. Many of the larger Part III authorities had set a standard of work of which many counties and county boroughs might be proud. It should, however, be in their own interests to have close association with county health departments. In the past it had been difficult for an M.O.H. of a municipal borough or an urban district to obtain an appointment as M.O.H. of a county or county borough. This anomaly should disappear if the kind of association outlined came into being. What was needed was reconstruction of the system of local government—a system which could hardly be said to have come into being for the purpose of administering the numerous highly technical services now forming an essential part of daily life.

A vote of thanks was accorded to Mr. Chuter Ede and to Sir Wilson Jameson and the guests then withdrew.

THE GROUP'S WORK.

The Acting Hon. Secretary, Dr. A. A. E. Newth, gave a report on the progress of the Group since its revival in December, 1943. Great interest had been shown in the movement, and the membership had increased from 168 to over 300. Sub-Groups had already been formed in the East-Midland and Yorkshire areas, and others were contemplated. In conjunction with the M. & C.W. Group, the Group had been asked by the Society to frame answers to specific questions put by the Ministry of Education on Draft Regulations for Medical Inspection of School Children, and the Committee had given most careful attention to this. In co-operation with the County Districts Group the position of Part III

School Medical Officers under the Act had been discussed, and further representations were being made. The General Meeting held in March had been well attended, and gave members an opportunity to express their opinion on important matters.

The Acting President, Dr. Kershaw, emphasized the necessity for a healthy and active Group to safeguard the position of the School Medical Officer under the Education Act of 1944.

Officers were then elected for the ensuing year.

NORTHERN BRANCH

President: Dr. I. McCracken (M.O.H., Durham C.C.).

Hon. Secretary: Dr. J. A. Charles (M.O.H., Newcastle).

The annual meeting of the Branch was held in Newcastle-upon-Tyne on October 28th. The President and 26 members were present. The minutes of the meeting held on July 28th were read, confirmed and signed by the Chairman.

It was agreed to accede to a request from the North of England Branch of the B.M.A. requesting that their representation on the Northern Branch of the Society be increased to two.

Dr. McCracken, the retiring President, said he had had a very enjoyable year of office, and thanked Dr. Charles for his valuable services as Hon. Secretary, and also Dr. Hurrell, who was taking over that office. In asking Dr. Tilley to take over the presidency, Dr. McCracken said he looked forward to the coming session being one of great activity.

Dr. Tilley expressed his appreciation of the action of the Branch in making him President. He pointed out that the well-attended meetings of the past session were in no small measure due to Dr. McCracken's interest and enthusiasm. Dr. Grant expressed the gratitude of the Branch to Dr. McCracken for the very able manner in which he had conducted the meetings during his difficult year of office.

Dr. Tilley then delivered his Presidential Address, on the changing outlook in the public health services.

MATERNITY AND CHILD WELFARE GROUP

President: Dr. Marjorie Back.

Hon. Secretary: Dr. Violet Russell.

The Annual General Meeting, which had been postponed from July, was held in London on October 27th. Seventy members and guests attended and were received by Dr. Morris Jones in the absence of the President owing to illness.

After the business of the meeting had been concluded, Dr. Andrew Topping, Director of Health, European Regional Office, UNRRA, gave a most interesting address on the health aims of UNRRA. The aim of UNRRA was rehabilitation rather than charity. The nations released from the enemy needed help to re-establish their own industries and were themselves contributing financially towards the organisation. Dr. Topping showed that the problem was not only a medical one. Food, fuel, clothing, and building materials would be urgently needed. The difficulties of repatriation were lessened by the discovery of D.D.T., and this new insecticide marked a great advance in preventive medicine. Criticisms of UNRRA were sometimes directed towards the apparent slowness in taking action. These were made without knowledge of its constitution, which did not permit action except by invitation of the country concerned, and that of the military administration which took control in the first instance. In order to minimise the difficulties there had to be some limitations to its use, as in this instance, but the aim of the organisation was a noble one.

Dr. Jean Mackintosh, the President-elect, proposed a vote of thanks to Dr. Topping. Further acclamation marked the appreciation of the Group to Dr. Morris Jones in the chair.

President: Dr. Jean Mackintosh.

Hon. Secretary: Dr. Miriam Florentin.

Hon. Assistant Sec.: Dr. Ann Mower White.

The first meeting of the session was held in London on November 24th.

The new president introduced Miss Anna Freud, who gave a most interesting talk on the interaction between the emotional and physical development of the young child. Up to the end of the last war, she said, those people who cared for children were not trained to watch the child's mind. Even in hospitals children became patients and lost their identity, for their psychological make-up was not studied. Knowledge of any individual child started from scratch, and its psychological past not taken into account. During the last 20 to 30 years this had changed, especially with the growth of day and residential nurseries.

Miss Freud introduced three points for discussion: (1) sleep, (2) bladder and bowel control, (3) feeding. The child who kept awake might be lonely, but never ascribe his dislike of being left by mother to loneliness, but to some bodily need—e.g., thirst, bladder discomfort, or noise. Thumb-sucking, masturbation, and rhythmical

rocking were means by which a child withdrew himself from his loved ones to some bodily plane attached to himself. Evacuation of children from their homes often produced a complete breakdown in habits of cleanliness, but if the child could find a mother substitute some of the good habits returned. The breakdown of habit training after the first year of life was not always related to mother separation, but sometimes to an interest the child had in dirty things. Miss Freud suggested that another cause for retrogression was the advent of a new baby or careless handling of the child. During the first year of life, if a child was healthy, food intake and digestion would be satisfactory. There was a definite relation between food and mother, and in rejecting food a child rejected his mother. In mother separation, some refused food and some overate. The 15- to 18-month-old child liked to feed himself and would eat if allowed to do so. Hunger did not seem to make a child eat. Disappointment and anger at not getting food made a child lose his appetite. Hunger, a physical thing, was swamped by anger and disappointment, a mental thing.

NORTH-WESTERN BRANCH

President: Dr. V. T. Thierens (M.O.H., Blackburn).

Hon. Secretary: Dr. J. E. Spence (M.O.H., Eccles).

A meeting of the Branch was held in Manchester on November 10th, 1944. The President was in the chair and there were 43 members and visitors present. The minutes of the last meeting were taken as read and signed.

PENICILLIN

The President introduced Prof. A. D. Macdonald, who gave a paper on penicillin in which he described its nature and the methods of culture of *Penicillium notatum*, in this country by superficial culture on nutrient media, and in America by deep culture in tanks. He said that work was being carried out at present to discover the best medium to give a high yield of penicillin quickly. Penicillin was an unstable acid but formed freely soluble and reasonably stable sodium and calcium salts. The calcium salts at first produced were far from pure and were regarded as too irritant for injection, but were suitable for local application. Synthesis of penicillin had been attempted and although the molecule had been partly synthesised it might be some time before a synthetic product was available. The potency of the product had been measured in Oxford units, but an international unit had just been established which would be the specific activity of a fixed weight of a standard preparation. Prof. Macdonald then dealt with the pharmacology of penicillin, its toxicity, absorption, and excretion, and the various methods of estimating its potency.

Florey claimed that the value of penicillin depended on the four following characteristics: (1) It acted in great dilution as a bacteriostatic, in dilutions of one in fifty to one in one hundred millions. (2) It retained its activity in tissue fluids, serum, pus, or autolysed tissues. (3) It acted equally well in the presence of large numbers of organisms, inhibiting almost all of them. (4) It had no significant poisonous effects on animals, tissues or individual cells such as red and white corpuscles.

Recent work, Prof. Macdonald said, had shown that penicillin in sufficient concentration was also bactericidal, 99% of the organisms being destroyed. There was no lysis of the organisms and no loss of penicillin from the solution. The organisms sensitive to penicillin were the cocci and spirochaetes, but most bacteria were insensitive to it. The dosage should be adequate, otherwise strains resistant to penicillin might develop.

Prof. Macdonald then referred to report on the use of the penicillin in war surgery and to the American work on the use of it in syphilis, which was promising. It had been administered in varying doses by three-hourly intramuscular injections for four to seven days. The spirochaete had disappeared from chancres in 12 to 16 hours, the lesions had healed rapidly, and a reversal of the serological condition had occurred in six to eight weeks. Of the first 700 cases, after nine to ten months, only 2% of failures had been reported. Patients "chemo-resistant as regards arsenicals" had responded to penicillin, and it had been used with apparent success in congenital syphilis. In late syphilis the results were just as dramatic; gummatous lesions had resolved and parietic symptoms had improved, but there was apparently no serological improvement. Sulpha-resistant cases of gonorrhoea in males responded to five-hourly injections of penicillin without apparent relapses, but in women 10% of the patients required a second course of treatment. It was also very successful in ophthalmia neonatorum and other gonorrhoeal infections such as arthritis. In bacterial endocarditis there had been a few recoveries but, although there has been symptomatic improvement, the results had been disappointing.

A hearty vote of thanks to Prof. Macdonald was carried with acclamation.

A meeting was held in Manchester on Dec. 15. In the absence of the President, Dr. J. J. Butterworth took the chair. The minutes of the last meeting were approved.

It was resolved that sub-groups of the M. & C.W. and School Medical Groups be formed in the North-Western District, with officers and a committee in common.

Dr. W. A. Ramsay commented on the general principles underlying the proposals of the Askwith Committee, and certain amendments to the proposals were agreed to by the branch.

EASTERN BRANCH

President: Dr. V. R. Walker (M.O.H., Lowestoft).

Hon. Secretary: Dr. D. E. P. Jolly (Assist. M.O.H., Ipswich).

At a meeting of the Eastern Branch on Dec. 2, 1944, 25 members and guests were present. The minutes of the last meeting were read, confirmed, and signed by the Chairman. Dr. Wainwright, the retiring President, then installed Dr. Walker as President for the ensuing year.

Dr. Henderson, of the Ministry of Education, outlined the implications of the new Education Act so far as the school medical services were concerned. An interesting discussion followed, and Dr. Henderson was thanked for attending the meeting.

A meeting of the sub-group was held in Nottingham on Dec. 8. The President and 20 members were present. Physical training organisers in the area were invited, and 11 were present.

The minutes of the meeting held on July 21, 1944, were confirmed and signed.

Mr. S. A. S. Malkin, F.R.C.S., then read a paper on Posture, and a film on the subject was shown. After an interesting discussion a vote of thanks was accorded to the speaker.

OBITUARIES

SIR HENRY GAUVAIN, M.D., F.R.C.S.

We regret to record the death on Jan. 20, at Alton, Hampshire, of Sir Henry Gauvain, well known for his work on tuberculosis of the bone, joints, and glands.

Henry John Gauvain was born in 1878, and won a scholarship to St. John's College, Cambridge, graduating with first-class honours in the Natural Science Tripos. Proceeding as senior science scholar to St. Bartholomew's Hospital, he qualified in the conjoint examination in 1906, and took the B.Ch. in 1908, proceeding to the M.D., M.Ch. in 1918 and the F.R.C.S. in 1927. He received the M.D. (Hon. Causa) of Melbourne University in 1935, and was knighted in 1920.

Henry Gauvain had been medical superintendent of the Lord Mayor Treloar Cripples' Hospital and College, Alton and Hayling Island, since its foundation in 1908, and he was also founder and medical superintendent of Morland Clinics, Alton. Among many appointments he was honorary consulting surgeon to the King Edward VII Welsh National Memorial Association for the Treatment of Tuberculosis, late consulting surgeon (tuberculosis) to the London and Essex County Councils, consulting surgeon to the Hampshire C.C. and the King George's Sanatorium for Sailors, Bramshott. He was at one time examiner on tuberculosis for the University of Wales. He served as president of the electrotherapeutic and diseases of children sections of the Royal Society of Medicine, and was vice-president of the National Association for the Prevention of Consumption and also of the International Light Association.

As a tuberculosis specialist he was a believer in fresh air, sea air, and sunlight, and carried out in this country work similar to that of Rollier at Leysin; he was greatly loved by his child patients for his kindness and sympathy. When he took time off from his many and arduous duties, he was fond of travelling, sailing, and fishing (he was a member of the Cambridge University Cruising Club). He married in 1913, and had one daughter.

ISABELLA CAMERON, M.D., D.P.H.

We regret to record the death in Edinburgh on Jan. 10, of Dr. Isabella Cameron, for 25 years an officer of the Local Government Board and of the Ministry of Health.

Isabella Douglas Cameron was the daughter of James Cameron of Stanely, Perthshire, one of her brothers being Mr. J. F. Cameron, Master of Gonville and Caius College and lately Vice-Chancellor of Cambridge University; a sister was a distinguished student of mathematics under Prof. Chrystal of Edinburgh. She herself received her medical education at the Medical College for Women, Edinburgh, qualifying M.B., Ch.B., in 1898, and taking the D.P.H. of Cambridge in 1905. The following year she received the M.D. of Edinburgh for a thesis on "A Study of the Dietary of Several Halls of Residence for Students in Edinburgh"—a companion study to Prof. Noel Paton's work on the dietary of the working classes in Edinburgh. When first qualified, Dr. Cameron held appointments at the Crichton Royal Institution,

Dumfries, the Children's Hospital, Sheffield, and the Infectious Diseases Hospital, Walthamstow; she also worked in the laboratories at Cambridge University. She then returned to Edinburgh University as lecturer in physiology, being engaged at the same time in research work in the laboratory of the Royal College of Physicians, Edinburgh, where she worked on methods of standardizing suprarenal preparations. In May, 1906, Dr. Cameron was appointed medical officer to the Carnegie Dunfermline Trust, a pioneer body in the physical training of schoolchildren, later taking up a similar appointment with the Edinburgh Provincial Committee for the Training of Teachers. During her holidays she used to visit children's institutions in Germany, Canada, and the U.S.A. Dr. Cameron was a pioneer in the maternity and child welfare services, and her advanced and imaginative work was in 1937 acknowledged by the Royal College of Obstetricians and Gynaecologists, who elected her to membership.

G. A. DAWSON, M.D., D.P.H.

We regret to record the sudden and tragic death on Dec. 15, at the early age of 46, of Dr. G. A. Dawson, M.O.H. for Darlington.

George Alexander Dawson was a graduate of Queen's University, Belfast, where in 1920 he received the first prize in psychological medicine. In 1921 he qualified M.B., B.Ch., B.A.O. (Honours), and proceeded to the M.D. in 1924—the same year in which he took the D.P.H. After serving as resident M.O. in the Belfast Fever Hospital and Belfast Infirmary, he was appointed assistant M.O.H. for Oldham. In 1925 he was appointed to the same post in Darlington, and shortly afterwards succeeded his chief, who was killed in a motoring accident. Dr. Dawson was president of the Northern Branch of the Society in 1930-31, and was elected a Fellow of the Royal Sanitary Institute in 1935. He was chairman of the district council of Toc H, a past president of Rotary, and a past master in Freemasonry. He was unmarried. His forceful presence and capacity for hard work will be greatly missed in Darlington, where he is mourned by a large number of friends and colleagues.

ROBERT MUSCHAMP, L.R.C.P., D.P.H.

We regret to record the death in retirement, at the age of 79, of Dr. Robert Muschamp, one-time M.O.H. for Guiseley and Yeadon and a Fellow of the Society of Medical Officers of Health.

Robert Muschamp received his medical education at Leeds University. He qualified L.R.C.P., L.R.C.S. Ed., L.R.F.P.S. Glas., in 1892, and in 1908 took the D.P.H. of the R.C.S.I. He was for about 20 years a member of Guiseley Urban Council, and for 12 years a member of the West Riding C.C. He is survived by his widow, a son, Dr. A. Muschamp, and two daughters, Dr. May and Dr. Evelyn Muschamp; his three children are all in practice in Guiseley and Yeadon.

COUNTY COUNCIL OF ESSEX AND URBAN DISTRICT COUNCIL OF THURROCK

Applications are invited from duly qualified medical practitioners, possessing the Diploma in Public Health, for the appointment of two temporary Assistant County Medical Officers and Assistant Medical Officers of Health. The salary attaching to the appointments will be at the rate of £500 a year, together with war bonus, rising, subject to satisfactory service, by annual increments of £25 to £700 a year, but the commencing salary may be varied having regard to experience and capabilities. Forms of application may be obtained from the Clerk of the County Council, to whom they should be returned completed, accompanied by copies of three recent testimonials, immediately. Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN,
Clerk of the County Council.
A. E. POOLE,
Clerk to the Urban District
Council of Thurrock.

County Hall, Chelmsford.
January 26th, 1945.

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EDITORIAL

Difficult Children

It was found that out of 486 children living in hostels for "difficult" children under the Government evacuation scheme, only 32 had not improved since admission; 215 were described as "much improved" and 233 as "improved." These figures are given in "Hostels for Difficult Children—A Survey of Experience under the Evacuation Scheme." Hostels are used for evacuated children who, because of problems of behaviour, habit, or temperament, are for a time unsuitable for billeting in the ordinary way. The Survey, made in 1943, summarises the experience of four years of evacuation. It does not attempt to deal with the medical aspects of the care of children in institutions, or with methods of child guidance, but is concerned with the care of the "difficult" child in an environment most likely to produce good and lasting results. Children admitted to the hostels are often reported to have displayed three or four different types of behaviour problem at once. The most common were stealing or pilfering, bed-wetting, and generally unruly behaviour. An analysis of the home and family backgrounds of the children disclosed that 190 of them had satisfactory homes and 142 unsatisfactory; 66 had no homes in existence. Intelligence tests are not necessarily given to all children in hostels, but about half of them under consideration had had mental tests. More than half of those tested were of average intelligence or slightly below. A few were of high intelligence.

Success in running a hostel depends only to a small extent on the initial possession of any particular kind of knowledge, and staffs have been recruited from among persons of widely varying experience and background. The essentials are sympathy with the children, ability to win their confidence, an understanding of their fundamental needs, and a realisation of the purpose for which the hostel exists—namely, to help each child to overcome its difficulties and to become eventually a person who can stand up to the demands made by life in an ordinary family and in the world outside it. Hostel children usually go out to school and are attached either to an evacuated school party or to a local school, where they mix with both local children and other evacuees. The primary aim was to meet as fully as possible the child's need for a home background. In addition matrons and wardens of many hostels have put much thought and energy into bringing together parents and children who have been out of touch for a time and enlisting the co-operation and understanding

* H.M.S.O., York House, Kingsway, London, W.C.2. Price 6d. Post free, 7d.

of parents who, without any intention of "abandoning" their children, have entirely failed to realise what harm and unhappiness may be caused by neglect of writing or visiting.

Generous grants for the purchase of play and occupational material have been made to hostels by the British War Relief Society of U.S.A. These grants have made it possible to provide such equipment as indoor and outdoor games, paints, blackboards, bricks and constructional toys, sand pits and swings, gardening and carpentry tools, percussion band instruments, handwork materials, gramophones and records. Acknowledgment is made in the Report of the interest and enterprise shown by the local authorities responsible for the administration of hostels and the devoted work of hostel staffs; and of the practical help given by many voluntary workers, and the understanding co-operation of householders.

Water Bill, 1945

The object of the Water Bill, 1945, introduced in the House of Commons on February 2nd by the Minister of Health, is to make possible a national water policy designed to secure that "all reasonable needs for water by householders, industry, and agriculture can in future be met speedily and without avoidable waste." It proposes to impose on the Minister of Health for the first time the express statutory duty of promoting throughout England and Wales the provision of adequate water supplies and the conservation of water resources. The Bill embodies the proposals issued by the Government last April in the White Paper on a National Water Policy (Cmd. 6515), which stated that the problem of adequate water supplies "is not one of total resources but of organisation and distribution. . . . There is in this country ample water for all needs." As a preliminary to this Water Bill, the Rural Water Supplies and Sewerage Act, 1944, making grants totalling over £15,000,000 available towards the cost of post-war extensions of piped water and sewers in rural areas, was passed last July.

If the Bill becomes law central responsibility for water policy will be the function of the Minister of Health. The Government's Central Advisory Water Committee would be reconstituted as a statutory body and would advise not only on matters referred to it by any Government Department, but also, on its own initiative, on "any question within its ambit." Surveys of bulk needs of large areas would continue to be carried out where necessary in England and Wales by Joint Advisory Water Committees, who would be empowered to require information and statistics. The Minister of Health would have powers to require information and statistics from all water authorities and other users of water;

and all persons sinking wells or boreholes deeper than 50 ft. for water would give information regarding strata, etc., to the Geological Survey.

The general framework of existing local organisation would be retained, but default and directing powers of the Minister of Health would be strengthened, and amalgamation of undertakings and joint action encouraged and, if necessary, enforced to secure efficiency and economy; the giving of bulk supplies by one undertaker to another would, if necessary, be enforced.

Special steps would be taken to protect water resources, especially underground water, against misuse, waste and pollution. Statutory undertakers would be enabled, subject to proper safeguards, to take water from rivers and streams on reasonable conditions, and to acquire land by agreement or compulsorily. The Bill would be operated by a simplified system of Ministerial Orders. Interested parties would have full opportunity to put their views before the Minister. Orders for compulsory amalgamation of undertakings, compulsory taking of water rights, and certain other matters would be subject to review by Parliament if opposition was maintained after local inquiry. Industry and agriculture would be given the right to demand water on reasonable terms and conditions. The Bill consolidates and modernises the "Waterworks Code" (parts of which date from 1847) on the lines of the Water Undertakings Bill of 1943 (3rd Schedule) and prescribes a uniform procedure for revision of water rates and charges.

New International Sanitary Conventions

Drafted and sponsored by U.N.R.R.A., two new International Sanitary Conventions, amending those at present in force, came into operation on January 15th. By that date the signatures of 17 of the Governments of the United Nations were affixed in Washington to the new Conventions. Before the war it was recognised that advances in preventive medicine had rendered the present Conventions governing land, sea, and air traffic obsolescent. The development of vaccination against yellow fever has required changes in the yellow fever clauses of the air convention, and the British Interdepartmental Committee on the Control of Yellow Fever had already recommended drastic alterations in these provisions: these changes have been adopted in the appropriate areas in Africa. The expected migrations of large numbers of people after the war required special consideration, although the health measures needed for their organised movement have been dealt with by a special Agreement between the governments concerned, which it is hoped will shortly be signed. The International Office of Public Health in Paris—the technical body concerned with the revision of the Sanitary Conventions—being then in enemy territory, U.N.R.R.A. was entrusted with the work of revision. Early in 1944, its Expert Commission on Quarantine, under the Chairmanship of Dr. P. G. Stock, of the Ministry of Health, completed the work in a remarkably short time. The drafts of the revised conventions were approved in principle by the Council of U.N.R.R.A. at its second session in Montreal, in September, 1944, and were referred to the Standing Technical Committee on Health for final revision. Meanwhile, Paris had been liberated, and negotiations to safeguard the position of the Paris Office and to ensure its collaboration with U.N.R.R.A. were successfully undertaken.

As a temporary measure, and until a full international sanitary conference can be called, U.N.R.R.A. will administer the new Conventions and receive and transmit intelligence about epidemics. Such information will not, as hitherto, be confined to the occurrences of the five "Convention" diseases—plague, cholera, yellow fever, typhus and smallpox—but signatories are now under an obligation to notify U.N.R.R.A. immediately of the presence and course of any epidemic disease which may constitute a menace to other countries by its potential spread across frontiers. Signatory Governments also undertake to pass on to U.N.R.R.A. as regularly as possible statistics of all notifiable diseases occurring in their countries. U.N.R.R.A. will in turn distribute its information to the Governments concerned.

MALARIA IN ENGLAND*

By P. G. SHUTE,

Malaria Officer, Ministry of Health

I do not in this paper propose to deal with malaria indigenous in England before 1914-18, except to say that undoubtedly malaria was endemic as late as the nineteenth century and that it did, at times, reach epidemic proportions in certain areas. For a history of the subject readers should refer to a paper by Col. S. P. James entitled 'The Disappearance of Malaria in England.†

Infection of the Anopheles

Early in 1917 many soldiers returned to England because of persistent malaria relapses. Most of them continued to relapse frequently after their arrival, and from them the local anopheles became infected and caused numerous cases of indigenous malaria. In this particular year there were 330 cases. A similar number of indigenous cases of malaria occurred during 1918-19; from 1920 onwards the numbers were very few. All the cases, except one, were due to *Plasmodium vivax* (benign tertian) malaria. The one exception was a case of *Plasmodium falciparum* (malignant tertian).

Most of the patients contracted the disease on the south and south-east coast. For some years it was difficult to understand why small epidemics were occurring in this part of the country, but the recent discovery of biological races of *A. maculipennis* has, we believe, provided the answer.

In England there are four species of anophelines and laboratory experiments have shown that all four are susceptible to infection by one or more species of malaria parasites. Their importance as vectors is determined by density and the extent to which they feed on human subjects. The only species of anopheles likely to be of importance in malaria transmission is *A. maculipennis*. This species is not only present throughout this country but is widely distributed throughout Europe, N. Africa, N. America, Iraq, etc. Although *A. maculipennis* is numerous everywhere in England, the greatest density is to be found in low-lying, brackish, marshy districts. During the last few years it has been discovered that this species of mosquito is not a homogeneous species but a group of at least six varieties. No means has as yet been found whereby the adult stage can be classified according to the variety to which it belongs. It is only in the egg stage that the character can be differentiated, but in some varieties the male hypopygium is diagnostic. So far as the epidemiology of malaria is concerned, the fact that there is a number of varieties within a carrier species would not, in itself, be of much importance. The importance lies in the fact that the varieties differ in their choice of host. Under experimental conditions all six varieties are susceptible to malaria infection. Three of the varieties of the species *A. maculipennis* are strongly zoophilic in that they deliberately search for, and feed on, animals other than man, and it is with reluctance that they feed on man even when they are very hungry. The other three varieties bite man and other animals without discrimination.

Two varieties occur in England, and it is thought that one of these has been responsible for most of the cases of indigenous malaria, although the possibility that the other variety may have infected a few people cannot be ruled out completely. The two varieties, or sub-species as they are sometimes called, are *messeae* and *atroparvus*. *Messeae* breeds in fresh water only, and it is therefore more numerous inland than around coastal areas. It is difficult to induce it to feed on human beings, although on rare occasions this variety has been known to do so. *Atroparvus* breeds in both fresh and brackish water, but it prefers the latter. It is therefore much more numerous in low-lying coastal areas than it is inland. Females of this variety are quite indifferent about the source of their blood meals, and feed readily on man, pig, horse, cow, and rabbit. All the varieties have one habit in common, in

* Lecture to the Fever Hospitals Group of the Society of Medical Officers of Health on January 12th, 1945.

† *Proc. roy. Soc. Med.*, November, 1929, 23.

that they spend the greater part of their lives in habited shelters and leave of their own accord only for the purpose of egg-laying. At the approach of cold weather all the males and the larvae die. The females develop an adipose body which enables them to survive the winter months in a state of suspended animation until the return of the warm spring days, when they become active, take a blood meal, and go off to lay their first batch of eggs. Perhaps I should have mentioned that once a female mosquito is fertilised it remains so for the rest of its life; this enables the female to begin the new season's generation independently of the male.

Atroparvus, the variety which most concerns us because of its medical importance, continues to feed on man and animals well into the late autumn, and in mild weather until the end of October. Ovary development ceases in August, and so the female of this variety which has been sexually liberated finds no urge to leave the shelter where it has found protection and a continuous food supply. Large numbers survive through the winter in this state, and, as I hope to show later, this has an important bearing on malaria prevention and control.

Four Species of Parasite

It is, of course, quite impossible yet to estimate the number of troops who, having been infected with malaria, will be returning to their homes in this country at the end of the present war. The numbers will be large, and probably run into hundreds of thousands. Thus it would appear that the spread of malaria to the civil population is a foregone conclusion. However, this probability is not so formidable as would at first appear, and it may be worth while to mention some of the reasons for optimism. As is well known, there are at least four species of human malaria parasites. There is great variation in their behaviour both in man and in the mosquito, their response to anti-malarial drugs, and—very important from the point of view of spread—the frequency of relapses, as well as the length of time each species is able to survive in man. I will deal briefly with each species.

PLASMODIUM OVALE

This species very closely resembles benign tertian. It is comparatively rare in most malarious countries but is fairly common in central, East and West Africa. Relapses are almost unknown and primary attacks are easily cured by small doses of quinine or mepacrine, and even in the absence of anti-malarial drugs most cases recover spontaneously after about one week of fever. Our English *Anopheles* are efficient carriers, and the parasite completes its cycle in the mosquito in about 14 days providing the temperature is over 70° F. This species should not trouble us in the post-war years.

PLASMODIUM MALARIAE, OR QUARTAN

Although this species is less common than either benign tertian or malignant tertian, where it does occur it can be extremely troublesome, especially therapeutically. It survives in man longer than any other species of malaria, and relapses have been known to occur 20 years after the patient had been infected. For some unknown reason gametocytes (sexual parasites) are rare, even in heavily infected cases, and therefore it is not a species which is easily and frequently transmitted. For these reasons we need not be anxious about this species spreading in England after the war.

PLASMODIUM FALCIPARUM, OR MALIGNANT TERTIAN

Malignant tertian is a tropical and sub-tropical disease and is not endemic in temperate regions. In some parts of the world, such as the west coast of Africa, 90 per cent. of all malaria is due to this species of parasite. In eastern Europe, where summers are hot and winters are cold, malignant tertian is rare until the summer is well advanced, say the end of June or early in July. Relapses are less frequent than in benign tertian and the disease is fairly easily cured by anti-malarial drugs such as mepacrine or quinine. For some unknown

reason our English anophelines fail to become infected when fed on patients suffering from certain tropical strains of malignant tertian, but readily become infected when fed on patients infected with European strains of this species. Unless the atmospheric temperature is 75° F. or over, the infection usually dies out in the mosquito before the cycle is completed. The disease in man tends to burn itself out within a year of infection, and often within six months. These are, I think, sufficient reasons to help to explain why, after the last war, only one indigenous case of malignant tertian malaria was reported, and for the same reasons it is unlikely that after the return of troops from tropical regions malignant tertian will spread to the civilian population.

PLASMODIUM VIVAX OR BENIGN TERTIAN

The life of this species of parasite in man varies from one to three years. Relapses occur in over 50% of cases and may be as frequent as once a month during the first year. The cause of relapses is unknown, and at present there is no known treatment which will prevent them. In primary attacks in non-immunes very small numbers of parasites are required to produce clinical symptoms, and a patient may have three or four days of fever before parasites can be found in the peripheral blood. Gametocytes (sexual forms) are seldom found in primary cases until about the seventh day of fever, and reach their maximum about the tenth day of an untreated attack. In relapses, parasites are often numerous on the first day of fever and gametocytes are also present.

The very small numbers of parasites present at the beginning of a primary attack are probably explained by the absence of any resistance on the part of the host. So far as is known, the sexual forms evolve from asexual parasites, and a number of days must elapse before gametocytes can become numerous.

In relapses, a previous attack or attacks will have conferred some degree of tolerance on the host and, so, many more parasites are required to produce an attack. Therefore a patient may have numbers of parasites in his peripheral blood several days before a frank clinical attack develops. This is why gametocytes in large numbers are so frequently found on the first day of a relapse. The sequence to this from the point of view of spread and control is that mosquitoes may become infected by biting a patient of this kind some days before the clinical relapse occurs. This is probably the most important link between man and mosquito in the transmission of malaria.

The parasite of benign tertian malaria is able to develop in the mosquito at a temperature of 60° F., but at this temperature at least 30 days are required for the completion of the cycle. If the temperature is between 70° and 75° F. the parasitic cycle is completed in nine days. How long a mosquito will remain infective after the infection of the glands depends on the number of gametocytes ingested during the infecting blood meal, and the consequent number of oocysts which succeed in establishing themselves on the gut wall of the mosquito's stomach. When a mosquito feeds on a patient whose blood contains large numbers of gametocytes, the gut may contain over a thousand oocysts, and the glands over 100,000 sporozoites. Mosquitoes which are thus heavily infected can remain infective even after they have fed on 30 separate occasions. If the infected mosquito happens to belong to the species which lives in close association with man, then many cases of malaria may arise.

In England a mosquito which becomes infected in June is potentially less dangerous than if it became infected in August or September. In June it must visit a breeding ground about once every 48 hours for the purpose of egg-laying, many are drowned in the process, and those which survive often take shelter in nearby cowsheds and pig-sties. However, a mosquito infected in late summer will stay on in human dwellings for weeks, taking a blood meal every other day and possibly infecting every member of the household. In late summer the ovaries of the female cease to develop, and therefore visits to breeding grounds every few days are no longer necessary.

Deductions for the Future

The following deductions may be made: The species of parasite which is most likely to give rise to indigenous malaria in this country will be benign tertian, with the possibility of a few cases of malignant tertian should the atmospheric temperature be high enough for the transmission in the mosquito. The returning troops who are most likely to infect anophelines will be those who are carrying European strains of malignant tertian rather than those infected with tropical strains. As the life of this species in man is of short duration, troops returning with this parasite in their blood should not be infective to mosquitoes for more than a single summer. Moreover, many of the troops who have suffered from malignant tertian some months before coming home will have become immunised as the result of repeated attacks or will have been completely cured by anti-malarial drugs. Owing to the virulence of this species of parasite, rapid diagnosis and prompt and adequate treatment is of the utmost importance, especially as it affects a non-immune population. Our researches show that if non-immunes suffering from malignant tertian were left untreated the death-rate would be high.

Not all the troops who will be returning after the war will relapse, but, as already stated, the most troublesome feature of benign tertian malaria is its tendency to relapse over a period of one to three years. In the last war the only effective anti-malarial drug in general use was quinine. This drug is fairly effective in suppressing malaria, particularly benign tertian, providing it is taken daily. If, however, the use of regular quinine is interrupted, in most cases fever develops within a few days. This indicates that daily doses of quinine succeed in keeping the numbers of parasites below the pyrogenic threshold.

It is believed that immunity is linked in some way with parasite density, and there is evidence which suggests that immunity is reached more quickly in a patient whose blood contains numerous parasites over a period of weeks than in a patient whose blood contains only small numbers of parasites for a short duration. But even when parasites are present in the blood only in small numbers over a period of many weeks or months, some degree of tolerance bordering on immunity is acquired. Therefore many of the troops who returned to this country after the last war were partially immune and were not of much danger when bitten by *Anopheles*. Probably the most dangerous were those who were infected for the first time only a few weeks before returning home. Many of them would experience a series of relapses in this country for at least one year.

Mepacrine

In this war the drug which is being employed as a prophylactic is mepacrine. The action of this drug is not properly understood, but if it is given a few days before and for two or three days after infection with benign tertian no symptoms occur, and parasites cannot be found for a period of time varying from two months to one year, with an average of seven months. When this period of complete protection has passed fever is as severe, and parasites as numerous, as would have been the case had the disease been allowed to develop within its normal incubation period of 12 days. This primary attack is followed by frequent relapses, which appears to indicate that while the drug was being taken no degree of immunity had been established. Therefore those troops who have been successfully protected by mepacrine against attacks of benign tertian while abroad may experience their first attack of malaria many months after their return to this country, and hence there will be a potentially large relapsing rate than there was after the last war. It is known that latency of many months' duration does occur in benign tertian even in cases not protected by mepacrine or any other anti-malarial drug. But where mepacrine prophylaxis is practised latency may occur in the majority. In cases where the disease has broken through the drug barrier it is thought that this is because the patient failed to take his mepacrine regularly or because the drug was not fully absorbed.

Gametocytes

Earlier in the paper I pointed out that in primary benign tertian malaria, gametocytes are seldom present in the peripheral blood in sufficient numbers to infect *Anopheles* until the seventh to tenth day, but that in relapses gametocytes are more numerous on the first day than on the following days, even in the absence of treatment. There is always the possibility that sexual as well as asexual parasites may be in the peripheral blood several days before the actual onset of the clinical relapse. These cases may infect mosquitoes before clinical symptoms appear and on the first and following days of fever. Neither quinine nor mepacrine possesses gametocidal properties, and so long as gametocytes remain in the peripheral blood they are infective to mosquitoes. After treatment with these drugs, asexual and sexual parasites disappear from the blood in about three to four days. The only known drug in production which will sterilise gametocytes is pamaquin. When given in small doses such as 0.02 or 0.03 gm. pamaquin will destroy the gametocytes in 24 hours. If it is considered advisable to give pamaquin on the first and second days of a relapse to sterilise the gametocytes, mepacrine should not be given at the same time. Quinine, however, could be used without any adverse effects.

The Mosquito Net

The value of the mosquito net should be borne in mind, especially in districts where *Anopheles maculipennis* is abundant. In some parts of England after the last war, where numbers of indigenous cases occurred, the local authorities purchased a number of bell-shaped mosquito nets which were fixed to the bed and the patient slept under it until his fever subsided and his blood became negative.

Carrier Mosquitoes

In countries where malaria is endemic the percentage of infected mosquitoes may be as low as one or two. In villages in England where many cases of indigenous malaria occurred in a single summer we never succeeded in finding an infected mosquito out of many hundreds dissected. However, when a case of malaria does occur the first anti-mosquito measure to be taken is to destroy all the adult mosquitoes in the house of the patient, because these mosquitoes may be infective or may have acquired the infection from biting the patient. The destruction of a few mosquitoes in the houses would probably contribute more to the prevention of the disease spreading than the destruction of hundreds of thousands of mosquito larvae in their breeding grounds. Whether action should be taken against breeding grounds will depend on many factors based on a survey of the locality. As the majority of indigenous cases in England are contracted towards the end of the summer or early in autumn, no useful purpose would be served in carrying out anti-larval operations because the active breeding season would have finished for that year.

Anti-Larval Measures

It may be advisable to formulate a plan for anti-larval measures for the following year, but this will depend on whether the number of cases justified such drastic measures and also the extent of the breeding grounds to be treated. For example, the extensive marshes at the estuary of the Thames and the Romney marshes form large breeding grounds, and it is questionable whether, even if a number of cases of malaria occurred, anti-larval operations would be the most efficient means of breaking the parasite cycle between man and mosquito. On the other hand, if cases occur in a village where the only breeding grounds are a few lakes or ponds, then these should certainly be treated. In a small town in England last year two gypsies, a father and daughter, contracted benign tertian malaria. They lived in a caravan close to a large lake which is a breeding ground of *A. maculipennis*. As the lake is situated within a few hundred yards of some houses, we advised the local authority that next year it should be treated, beginning early in June.

The suggestion put forward by some people that anti-larval operations should be carried out as a precautionary

measure is, I think, unjustified, especially where breeding grounds are extensive. As already stated, *A. maculipennis* is present all over the country in varying density, and where the mosquito occurs there is always the danger of malaria, providing gametocyte carriers are present and the atmospheric temperature and humidity are sufficiently high. Therefore I believe that, when necessary, measures against the adult insect will be the most efficient, cheapest, and the easiest means of reducing their numbers in any locality. Care should be exercised in the choice of an insecticide; it should kill instantly and should not leave a smell; otherwise, if stables and other animals' houses are treated, the smell may repel the mosquitoes and cause them to enter human dwellings.

D.D.T.

Since the war a number of new insecticides have been discovered, some of which are still on the secret list and of those no information will be forthcoming until the end of hostilities. D.D.T. appears to be extremely promising as a mosquito insecticide, but it remains to be proved whether it is as effective against mosquitoes as against bugs and lice.

Early Diagnosis

In conclusion, I would like to stress the importance of early diagnosis in indigenous cases of malaria. Always take a blood film in suspected cases before giving anti-malarial drugs. This does not imply that where there is delay in reporting on the blood examination drugs should not be given. Two films should be taken, one thin and one thick. A thin film should be spread so that the red cells are almost touching but not overlapping. A thick film should be spread over an area about the size of a silver sixpence, and should be just so thick that newsprint can be seen through the drop of blood when the slide is lying flat on it. Blood films will be examined free of charge if sent to the Ministry of Health's Malaria Laboratory, Horton Hospital, Epsom, Surrey. Malaria is, of course, a notifiable disease, and in the event of cases occurring advice and help can be obtained at the Ministry of Health.

POSTGRADUATE EDUCATION OF MEDICAL PRACTITIONERS IN PUBLIC HEALTH

INTERIM REPORT BY SOCIETY OF MEDICAL OFFICERS OF HEALTH

1. The Society of Medical Officers of Health puts forward the following views and proposals on postgraduate education in public health, realising both that there will be urgent need for the provision of training for officers wishing to enter the public health service as soon as demobilisation from the Fighting Services begins, and also that the nature of the establishments of these departments must remain to some extent uncertain until the design of a comprehensive medical service is completed. It has had to be assumed that the existing special branches of the health service will persist, and that medical officers will require qualification for them. The proposals made are intended to cover a period of years while the shape of the new medical services is taking form.

The Present Requirements

2. The Society is of opinion that the system of training in the past has not kept pace with the evolution of the services comprised within the general designation "public health." Postgraduate qualifications in public health (for the sake of brevity referred to hereafter as the D.P.H.), for the recognition of which the General Medical Council became responsible in 1886, were intended to fit the holders for appointments as medical officers of health, and possession of such a qualification gradually became imperative by law for these officers. It has not become obligatory for any other officers, except

medical supervisors of midwives.* On the other hand, some appreciation of the fact that medical officers engaged in public health work may need other types of training and experience is indicated by the diverse conditions laid down by the Minister of Health governing the approval of their appointment.† Nevertheless a D.P.H. has become virtually the portal of entry to the public health service, and those medical practitioners who hold responsible posts in branches of the health service have, therefore, in effect had to comply with more stringent conditions as regards qualification than the medical officer of health himself.

3. The effect of this state of affairs has been to deflect to a rather long public health training a number of postgraduate students from the special study and training which would be most profitable in connection with their future work, or to extend unduly the period they have had to devote to obtaining postgraduate qualifications. This hardship will become greater if any new requirements for the recognition of specialist rank should involve substantial periods of academic study and instruction incompatible with full-time remunerative appointment, and if possession of a D.P.H. is still required of these specialist officers. The Society considers, therefore, that the qualification for medical officers of health should be more clearly differentiated from those of other public health officers, and that these latter officers should, as a rule, be expected to pursue only such studies and courses in general public health as will sharpen their appreciation of the preventive and social problems arising in connection with the practice of their speciality.

A Basic Course for Medical Officers in Public Health

4. This interim report, so far as officers other than medical officers of health are concerned, will deal only with their basic training in general public health and preventive or social medicine and not with the more specific training they ought to receive. The basic course will also be suitable for those medical practitioners giving part-time service only in public health departments. (See Appendix A.)

Modification of D.P.H. Course

5. The Society notes also, and concurs with, certain modifications in the D.P.H. curriculum which have been made by Resolutions and Rules of the General Medical Council, culminating in those of May 28th, 1937. The changes referred to have entailed the gradual removal from the courses and examinations of obligatory practical instruction and tests in chemistry, physics, physiology and biochemistry. The Society considers that this policy should now extend to bacteriology and the other subjects grouped with it. This view does not signify any lack of appreciation of the importance in relation to the public health of these subjects—or indeed of the subjects to which this policy has already been applied. It arises partly from a realisation that undergraduate teaching of this kind has improved and extended, but mainly from the belief that the time of students aiming to become medical officers of health can be more profitably occupied than by acquiring a technique and manipulative dexterity which they will never exercise. The student's knowledge and understanding of the subject can adequately be instilled by demonstration, and tested during a properly designed oral examination. The Society recognises that the demonstrational method of teaching which they would substitute for much of the practical laboratory work may make heavier demands on the staff of the university teaching departments, but they would deprecate the obligatory maintenance for this reason of the existing methods.

Modification of Examinations

6. For somewhat similar reasons the Society is of opinion that the practical tests in food inspection and reporting on

* Midwives (Qualification of Supervisors) Regulations, 1937. S.R. & O., No. 398.

† Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930. S.R. & O., No. 69.

premises are an unsatisfactory feature of the present examinations. No examiner familiar with the modern organisation of public health expects a high standard of proficiency among medical examinees in the technique of food inspection, as distinct from an accurate understanding of the effect of abnormalities of food on health. A practical examination which does not call for a high level of proficiency is better eliminated. As regards reports on premises, a properly controlled test of this kind has always proved difficult and the examination is therefore unsatisfactory. The Society, however, recognises the importance of practical instruction in as many aspects of the public health as possible, and of ensuring that attention will be paid to it. Two recommendations are therefore made in this connection—*viz.* (1) that every student preparing for the D.P.H. will keep a day-book in which he enters the practical studies he has pursued and discusses briefly their implication, these books to be scrutinised and discussed periodically by a member of the teaching staff of the university department and to be available at the examination; and (2) that every student shall prepare a dissertation to the satisfaction of the examiners on some subject coming under the observation of the candidate for a D.P.H. during his practical studies, the subject to be approved beforehand. An examining body should be free to conduct any other practical examinations they think desirable, and in this connection tests in statistical methods and the interpretation of statistical data may prove appropriate. Such tests, however, should not at present be obligatory, since suitable teachers in the subject are scarce.

Outline of Changes Proposed

7. To put these views into concrete form, and especially to provide a basic training in preventive or social medicine and public health, comprehensive but not too advanced, for all medically qualified public health workers, including those who are proceeding to a D.P.H., calls for a radical change in the design of postgraduate education in public health. The Society believes that for the immediate future this should take the form of (a) a basic postgraduate course as outlined in Appendix A, extending over one academic term in the case of whole-time students, or its equivalent in the case of part-time students; and (b) two further academic terms, or their equivalent, of more advanced study and instruction for those students desiring to obtain a full qualification in public health which will fit them for a post as medical officer of health, the course to take the form outlined in Appendix B. Satisfactory pursuance of the basic course would be certified by the medical school conducting the course as a result of an internal examination. The grant of a postgraduate qualification in public health would depend on satisfactory completion of the full courses extending over one academic year of full-time study, or its equivalent in part-time study, followed by a university examination in which an external examiner, or examiners, would take part.

8. The Society considers that much of the subject matter of the basic course (Appendix A) might well be included in the undergraduate medical curriculum. After careful consideration, however, it has come to the conclusion that a large proportion of the entrants to the public health service for several years will lack this basic knowledge unless it is provided by postgraduate training.

9. It will be seen that this scheme involves a departure from the system in vogue for many years, whereby courses and examinations for the D.P.H. have been divided into Parts I and II, the former being devoted to aspects of some of the basic sciences of medicine as related to the public health, the latter to those subjects likely to concern the student in his subsequent public health vocation. The Society considers that appreciation of the scientific foundation of all public health activities is essential to the practice of public health, that its study should extend throughout the whole curriculum in relation to the vocational subjects, and that technical *ad hoc* science examinations, separated in time from vocational examinations, are not well suited to test the knowledge and understanding of postgraduate students.

Whole-time or Part-time Study

10. The Society does not favour continuance of the rule made in 1937 that part of the curriculum must be whole-time. This rule had the advantage that the minds of the students, if they were successful in passing the Part I examination at the first attempt, were not diverted from the subjects of Part II by the imminence of having to surmount this obstacle before sitting for Part II of the examination. It has, however, had the effect of inducing some students to begin postgraduate studies in public health without sufficient clinical or other experience, and sometimes to interrupt their studies in order to obtain such experience. It has deterred some suitable students from entering after their experience in the practice of medicine has aroused their interest in public health. Moreover, any rule of this kind would be unnecessary if the scheme of training advocated by the Society were followed. It should rest with the university providing the courses to decide whether they shall be whole-time or part-time, but the type of employment in which a part-time student is engaged should be subject to the approval of the university.

Hours of Tuition and Study

11. It is necessary, in order to preserve a measure of equality between the contents of whole-time and part-time courses, that the minimum amount of time devoted to them should be prescribed. Too detailed a specification of hours to be given to particular subjects should, however, be avoided. Universities should be allowed a good deal of latitude to allow students to specialise on subjects in the last term at least, and to adjust their examinations accordingly by the inclusion of optional questions.

Contemporaneous Study and Service in a Health Department

12. The Society considers that actual working experience in a health department can be a more valuable means of gaining a knowledge and understanding of the practical side of public health than mere attendance at intervals for observation and tuition. This is true only, however, if the part-time officer is regarded as a student as well as a worker, and if his routine is so arranged that he is given facilities for observing and taking part in the widest possible range of the departmental activities. If a university is able to make arrangements of this kind with the health departments of neighbouring local authorities, part-time students so employed should be exempt from pursuing any other practical course, but they should be under the same obligation as other students to keep and submit periodically the day-book mentioned in paragraph 6 above.

Recognition of Specialists in Public Health

13. The Society understands that the General Medical Council and other bodies are considering the criteria by which members of the medical profession may be judged as fit to have their names included in a register of specialists. Local authorities employ, or utilise the services of, specialists in many categories. The Society intends to deal more fully with this subject in a subsequent report. For the present, comment is confined to those members of the public health service who may be regarded as specialists in public health in a general sense. For existing officers in this category it is suggested that medical practitioners should be admitted to the register (a) who have had five years' postgraduate training and experience in the practice of medicine, of which not less than two shall have been devoted to service in a public health department, such service involving to a substantial extent work and experience of a general public health character comparable to that of a medical officer of health, and (b) the possession of an approved academic qualification in public health. The criteria recommended to be adopted after a future appointed date are set out in Appendix C of this report.

APPENDIX A

SYLLABUS OF BASIC COURSE IN PUBLIC HEALTH AND PREVENTIVE OR SOCIAL MEDICINE

(One academic term of whole-time study, or its equivalent in part-time study. Minimum number of hours of instruction, 300.)

Systematic

- The history of public health and public assistance; the evolution of central and local governing bodies in relation thereto; the evolution of the law in relation to health (both general and occupational), public assistance and social security.
- The existing functions of central and local authorities and voluntary organisations, and the nature and object of the public health and medical services they administer.
- Social security, and the agencies for the relief of poverty and the promotion of social welfare.
- The sources and nature of information bearing on the health of the people, and its numerical presentation. The preparation of memoranda and scientific articles containing statistical data.
- The sources and control of infection.
- The influence on health of environment, including housing and occupation, of economic circumstances and nutrition, of personal hygiene and of mental strain.
- Physical education.
- The influence of heredity on health.
- Methods of educating the people as to the promotion and maintenance of health.
- International health organisations.

Note

Throughout this course diagrammatic and tabular illustrations should be used. References to legal powers and duties should be general only.

Practical

Demonstrations of special problems. Exercises in the solution of epidemiological problems and in the preparation of memoranda containing statistical data. Visits to places and institutions of public health importance.

APPENDIX B

SYLLABUS OF COURSES (SUBSEQUENT TO THE BASIC COURSE) FOR CANDIDATES FOR A RECOGNISED QUALIFICATION IN PUBLIC HEALTH

(Two academic terms of whole-time study, or their equivalent in part-time study.)

Systematic *

- Physiology, biochemistry, food and nutrition in relation to the public health.
- Bacteriology, parasitology and medical entomology, as applied to epidemiology.
- Mass aspects of disease. Administrative measures in relation to communicable and other diseases.
- Sanitation, water supplies, housing, town and country planning, and the application of scientific principles thereto.
- Statistical data and methods.
- Preparation and interpretation of plans.
- Administrative methods. Management and organisation of medical departments and institutions.
- The law relating to public health.
- Mental health services.
- Occupational health.
- Health education.

Clinical and Administrative

Residence and instruction for four weeks in a hospital for infectious diseases approved by the university, or attendance for tuition at such a hospital for three months, either course to be pursued in the late autumn, winter or spring:

Provided that a student who has served as resident medical officer for not less than six months in a hospital for infectious diseases approved by the university may be exempted from pursuing this course.

Practical †

Attendance at a health department, approved by the university, for individual observation and study of the daily work of each section under the guidance of members of the administrative, technical and executive staff, such studies to be arranged and co-ordinated by a member of the staff of the health department, such member to be recognised by the university:

* Minimum number of hours of instruction, 450.

† Minimum number of hours, 240.

Provided that a student who has held a whole-time appointment in a health department approved by the university for not less than one year, involving general and varied public health work, or a student who holds such an appointment part-time in such a department throughout the period when he is pursuing the systematic course, and who is under regular guidance by members of the staff of the department, may be exempted from pursuing this course.

EXAMINATION

Written.—Two papers and an essay.

Clinical and Oral.—Infectious diseases, epidemiology and hospital administration.

Oral.—General.

Note.—An external examiner or examiners should take part in all parts of the examination. The clinical and oral tests in infectious diseases, etc., should be conducted by the specialist teacher in infectious diseases and the teacher of bacteriology, etc.

APPENDIX C

CRITERIA FOR ADMISSION TO A REGISTER OF SPECIALISTS IN PUBLIC HEALTH

Postgraduate Training and Experience *

A. *Clinical: Not less than two years.*—Clinical training and experience shall include residence for not less than twelve months in approved hospitals or institutions and not less than six months in general practice: provided that, in exceptional cases, a special course of study or special experience occupying six of the 18 months so specified may be approved.

B. *Public Health: Not less than two years.*—Training and service in the central office or department of the medical officer of health of an approved local authority or authorities, in which experience of all branches of public health administration has been obtained: provided that, for practitioners who devote only part of their time to attending systematic courses of instruction in public health, this period shall extend to three years.

Academic Postgraduate Qualifications

Pursuance of a prescribed course of systematic study in public health, extending to one academic year of whole-time study or two academic years of part-time study, and the possession of a recognised postgraduate qualification in the subject.

Note.—Whether the systematic courses are part-time or whole-time the total postgraduate period prior to recognition would be not less than five years. The period of clinical training and experience should normally precede systematic special study.

BOOK REVIEW

Nearly two years ago the Council of the Royal College of Nursing set up a special committee for relief abroad, one object of which was to further nursing education on international lines, and another to establish a register of nurses wishing to do relief work overseas. Since that time lectures on various aspects of nursing in Europe have been given to the many nurses who have volunteered to do such work after the war. These lectures were printed in the *Nursing Times*, and have now been collected into a booklet, *For European Relief*, which can be obtained from the Royal College of Nursing, Henrietta Place, Cavendish Square, London, W.1, at a price of 2s. 3d. post free. Miss E. E. P. Macmanus, O.B.E., Chairman of the R.C.N.'s special committee and Matron of Guy's Hospital, contributes a foreword, and the opening article is by Dr. N. M. Goodman, of the Ministry of Health, who deals briefly with some problems of relief in Europe. There follow articles on the geographical characteristics, industries, social and health conditions, and medical services in eight occupied countries. Prof. J. R. Marrack contributes an article on feeding, and special articles are devoted to malaria, typhus, famine relief, dehydrated foods, and organisation of relief in the field. All the authors write in a popular style, and the booklet has been illustrated with photographs showing on the one hand the scenery and industries of the occupied countries, and on the other terrible devastations of war.

The Chadwick Trustees recently invited applications for a £250 Award to undertake research into the problem of density per acre for houses in large towns. The Award has now been made to A. Trystan Edwards, M.A., F.R.I.B.A., M.T.P.I.

* *I.e.*, after admission to the *Medical Register*.

OBITUARIES

H. M. LEETE, M.D., B.H.V., D.P.H.

We regret to announce that Dr. H. M. Leete, Medical Superintendent of the Hull City Hospital, the Tuberculosis Sanatorium and the Evan Fraser Hospital, died on February 15th, after a brief illness, at the early age of 50 years. Educated at St. Bees School, he studied medicine at the University of Durham College of Medicine, qualifying M.B., Ch.B., and M.R.C.S., L.R.C.P., in 1917. He obtained the D.P.H. and became a Bachelor of Hygiene of the University of Durham in the following year. In 1921 he proceeded to the degree of M.D. of Durham, taking respiratory diseases as his special subject.

After periods of service as house-physician and house-surgeon at the Royal Victoria Infirmary, Newcastle-upon-Tyne, Dr. Leete joined the staff of the Edinburgh City Sanatorium as resident medical officer, and ten months later he was appointed senior medical assistant and bacteriologist at the Edinburgh City Hospital for Infectious Diseases. In 1920 he joined the staff of the Medical Officer of Health of Birkenhead, and was engaged primarily on tuberculosis, infectious diseases, and bacteriological work. His interest in the diagnosis and treatment of infectious disease deepened with the years, and his contributions to medical and scientific literature on bacteriological technique and clinical findings were always carefully prepared and concisely expressed. While at Edinburgh he did research on the Schick Test, and published the first English paper on the subject in the *Lancet* of January 24th, 1920. In 1924 he published a paper jointly on "An Outbreak of Typhus Fever in England." After proceeding to Hull in 1930 he undertook valuable research work on "gravis" diphtheria, and materially added to our knowledge of this important subject.

A colleague writes: "An expert clinician, a skilled bacteriologist, and an able administrator, Dr. Leete proved himself an admirable Medical Superintendent. Beloved by his patients, especially the children, he was held in high regard by his professional colleagues, who invariably attended his clinical demonstrations in large numbers. The loss of his son while serving with the R.A.F. in North Africa was a serious blow to him. We, his colleagues in the Public Health Department and on the hospital staffs, mourn the loss of a dear friend; and the medical profession loses a distinguished graduate. Sincere sympathy is extended to his widow and daughter."

At the funeral at Kingston-upon-Hull Crematorium on February 17th, in the unavoidable absence of the President, the Yorkshire Branch of the Society was represented by Dr. N. Gebbie, M.O.H., Kingston-upon-Hull, a Past-President of the Branch.

J. LIVINGSTONE LOUDON, M.D., D.P.H.

We regret to record the death in his eightieth year of Dr. J. Livingstone Loudon, a Fellow of the Society.

James Livingstone Loudon received his medical education at the University of Glasgow, where he qualified M.B., C.M. in 1889, proceeding to the M.D. in 1902; in the same year he took the D.P.H. of Edinburgh and Glasgow. In 1931 he was made a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow. Among other appointments he served as M.O.H. of the Burgh of Hamilton. His interests were varied, and he was an elder of the kirk, a Justice of the Peace, and a Lieut.-Col. (T.D.) R.A.M.C. (T.F.), with war service in France. His father, also a doctor in Hamilton, was a close friend of David Livingstone, and it was a source of pride to Dr. Loudon that he bore the explorer's name. His eldest daughter is a member of the medical profession and is married to Dr. J. M. Lang, M.O.H. for Lanarkshire.

C. F. PEDLEY, M.R.C.S., L.R.C.P., D.P.H.

We regret to record the death on January 9th of Dr. C. F. Pedley, Deputy M.O.H. for Bournemouth.

Charles Franklin Pedley, the son of Dr. Thomas Franklin Pedley, was born in Rangoon in 1888. He went from Marlborough to Jesus College, Cambridge, where he took his B.A. in the Natural Science Tripos. Proceeding to Guy's Hospital, he qualified M.R.C.S., L.R.C.P., in 1914. In 1925 he took the D.P.H. of Cambridge University.

In turn Dr. Pedley served as assistant R.M.O. at the North Wales Sanatorium, Denbigh and at Baguley Sanatorium, Manchester, and as senior R.M.O. at Winsley Sanatorium near Bath. During the last war he was surgeon to a Belgian field hospital. After demobilisation he became assistant school medical officer under the Birmingham Education Committee, and later proceeded to Bournemouth as Deputy M.O.H. At the Annual Meeting of the B.M.A. at Bournemouth in 1934 he served as honorary secretary of the Section of Public Health.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

ANNUAL GENERAL MEETING

The Annual General Meeting was held at the London School of Hygiene and Tropical Medicine, London, W.C.1, at 2 p.m., on November 17th, 1944.

The minutes of the last Annual General Meeting held on November 15th, 1943, were approved and signed.

Prof. R. M. F. Picken was installed as President of the Society for the session 1944-45, and was invested with the badge of office by the retiring President, Dr. R. H. H. Jolly.

The meeting then adopted the Annual Reports of the Council and the Hon. Treasurer (together with Balance Sheet and Revenue Account) for the session 1943-44, as printed in *PUBLIC HEALTH* for November, 1944 (p. 22 *et seq.*).

Messrs. Deloitte Plender, Griffiths & Co., were re-elected Auditors for 1944-45.

The following candidates having been duly proposed and seconded were then elected to membership of the Society:

As Fellows:

Anderson, Mary Jane Brown, M.B., Ch.B. (SE. AND.), D.P.H.; Atkinson, Arthur George, M.D. (CAMB.), D.P.H.; Beattie, Mary F., M.B., Ch.B., B.A.O., D.P.H.; Bevon, Arthur Ewart, M.R.C.S., L.R.C.P.; Brodie, Mabel Garland, M.D., Ch.B. (SE. AND.), D.P.H., D.T.M. & H.; Bryan, Hugh Stanford, M.R.C.S., L.R.C.P.; Burns, R., M.B., Ch.B., B.A.O., N.U.I.; Cameron, Janet, M.R.C.S., L.R.C.P.; Craig, James Currie Baxter, M.D. (EDIN.), D.P.H.; Craig, J. Wallace, M.A., M.D. (DUB.); Crewe, Hilary J., M.B., Ch.B. (MANCH.); Cummings, Enid Gwendoline Maira, M.R.C.S., L.R.C.P.; Davies, Trevor Arthur Lloyd, M.D. (LOND.), M.R.C.P.; Dobson, Henry Donald, M.D., Ch.B. (EDIN.); Donovan, Mary C., M.B., Ch.B. (IRE.); Douglas, Charlotte Ann, M.D. (GLASC.); Douglas, Ellen, M.B., Ch.B. (SE. AND.), D.P.H.; Finn, Ruth C., M.B., B.S. (LOND.), D.P.H.; Fost, Kathleen, M.R.C.S., L.R.C.P., D.P.H.; Garrow, Jane Helen, M.B., Ch.B. (SE. AND.), D.P.H.; Gray, Elizabeth, M.B., Ch.B., D.P.H.; Haile, John Edgar, M.B., Ch.B. (EDIN.), D.P.H.; Hargreaves, Herbert, M.D. (ABERD.), B.S.; Henry, Rita, B.A., M.B., B.Ch., B.A.O.; Hill, Thomas Walter, M.D. (GLASC.), D.P.H.; Hills, Margaret A., M.B., Ch.B. (EDIN.); Holoran, Irene M., M.B., Ch.B. (SHREFF.), D.Ch.; Langley, Doris May, M.B., Ch.B. (LEEDS), D.P.H.; Macrae, Marjorie, M.B., Ch.B. (EDIN.); McCulloch, Elizabeth Esther, M.R.C.S., L.R.C.P.; McGregor, Catherine B., M.B., Ch.B. (GLASC.), D.P.H.; Martin, Justin Francis, M.B., B.A.O. (N.U.I.), D.P.H.; Mayou, Cecil Richard, M.D., M.R.C.S., L.R.C.P., D.P.H.; Melville, Mary A. J., M.B., Ch.B. (GLASC.); Murray, Florence Mabel, L.R.C.S., L.R.C.P.; Newell, Alfred George, M.D. (GLASC.), C.M., L.M., D.P.H.; Oates, E. Gwendoline, M.D. (LEEDS), M.R.C.S., L.R.C.P.; O'Connor, Bridget Imelda, M.B., B.Ch., B.A.O., D.P.H.; Pickles, William Norman, M.D. (LOND.), M.R.C.P.; Prince, Gwendolen F., M.B., Ch.B. (LEEDS), D.Ch.; Ramsay, Hugh, M.D., B.S. (LOND.); Rowland, Millicent Ivy, M.B., B.S. (LOND.); Sainsbury, Hugh S. K., M.R.C.S., L.R.C.P.; Sergeant, Bertram, M.B., B.S. (DUBL.), B.H.V., D.P.H.; Sheridan, Mary Dorothy, M.D. (LIV.); Stanley-Jones, Douglas, M.B., B.S., B.Sc. (HONS., LOND.); Swallow, Eithne M., M.B., B.Ch. (DUB.); Whitford, Charles Manson, M.B., Ch.B. (GLASC.), D.P.H.; Wilcock, Maurice E., M.B., Ch.B. (EDIN.), D.P.H.; Wilson, Lydia Anne, M.B., Ch.B. (LEEDS), B.Sc., D.P.H.; Wise, Eileen Clunie, M.R.C.S., L.R.C.P.; Wood, Ronald, M.B., Ch.B. (LEEDS); Woodcock, R. C., M.B., Ch.B. (LEEDS); Wyllie, Andrew McNae, B.Sc., M.D., Ch.B. (GLASC.), DIPL. PSYCH.

As Associates:

Sellers, Freda, L.D.S. (MANCH.); Woodcock, Edith Mary, L.D.S. (SHREFF.).

Prof. Picken then delivered his presidential address, which was printed in *PUBLIC HEALTH* for December, 1944 (p. 28).

COUNCIL MEETING

A meeting of the Council was held on Friday, February 2nd, 1945, at the London School of Hygiene and Tropical Medicine.

The President (Prof. R. M. F. Picken) was in the chair, and there were also present Sir Allen Daley, Drs. Cyril Banks, Malcolm Barker, N. D. Begg, G. F. Buchan, J. J. Buchan, W. A. Bullough, J. A. Charles, I. G. Davies, Jas. Ferguson, J. M. Gibson, A. S. Hebblethwaite, C. Herington, Katherine M. Hirst, R. H. H. Jolly, R. Leader, M. Manson, A. A. E. Newth, T. Orr, E. Virginia Saunders-Jacobs, J. A. Scott, J. E. Spence, J. A. Stirling, W. Stott, J. A. Struthers, Mr. A. Gordon Taylor, Drs. H. C. Maurice Williams, J. Greenwood Wilson and F. T. H. Wood.

Apologies for absence were received from Drs. G. Lissant Cox, W. M. Frazer, F. Gray, E. A. Gregg, J. W. Hunter, J. J. Jervis, H. Paul, G. V. T. McMichael, A. Massey, G. McK. Thomas and H. G. Trayer.

The minutes of the meeting held on November 17th, 1944, were approved and signed.

The White Paper Negotiations. The Council confirmed the nomination by the General Purposes Committee of Prof. R. M. F. Picken and Dr. G. F. Buchan as representatives of the Society on the Committee of the medical profession to negotiate with the Government on their proposals for a comprehensive National Health Service.

Elections to Council.—Drs. F. Gray and E. A. Gregg were re-elected to the Council as representatives of the British Medical Association, Dr. W. A. Bullough was elected in place of Dr. T. N. V. Potts (resigned) on the nomination of the Association of County Medical Officers of Health, and Dr. R. A. Leader as representative of the County District Group in place of Dr. G. F. Bramley.

Proposed Academy of Medicine.—The President reported certain proposals for the establishment of an Academy of Medicine representative of all branches of medical science, and suggested that the position of the Society in relation to such a scheme should be con-

sidered. He proposed that as a first step Dr. G. F. Buchan and Dr. Jas. Fenton be asked to submit to the General Purposes Committee a memorandum on the status of the Society, its organisation, and constitution. The proposal was approved and adopted.

Education Act, 1944.—Dr. Jas. Ferguson and Dr. Cecil Herington submitted a memorandum embodying the general principles approved by the General Purposes Committee on December 12th, 1944, in reference to the status of local school medical officers in relation to the new executives under the Education Act, 1944. In the belief that without mutual goodwill and co-operation between County Medical Officers and the Medical Officers of County Districts engaged in the scheme little can be achieved, the Council approved the recommendations of the memorandum as follows:

(i) County District Medical Officers shall be styled "Divisional Medical Officers." Their duties shall be to—(a) advise the divisional executive; (b) carry out the instructions of the Divisional Executive in respect of matters delegated to it; (c) carry out the instructions of the local education authority in relation to matters not so delegated; (d) prepare and submit such certificates, information and returns to the local education authority as it may require; (e) make an annual report to the Divisional Executive.

(ii) Where a county district council which is an autonomous maternity and child welfare authority agrees with the local education authority that the medical officer of such council shall act as divisional medical officer for part of the division that officer shall so act.

(iii) Where a county district council which is an autonomous maternity and child welfare authority agrees with the local education authority that any assistant medical officer, dentist or health visitor employed by such council shall carry out duties in regard to medical inspection and treatment, such officers shall be used by the divisional executive in the area of that county district council.

(iv) That where in any divisional executive area there is more than one divisional medical officer it is a matter of local arrangement who—one or more or all—shall attend the divisional executive meetings.

(v) The divisional medical officer shall have executive control over the staff, medical, dental, nursing, and clerical who carry out the school medical service in his division or his part of a division.

(vi) The divisional medical officer shall act under the general direction of the county medical officer and shall not be required to communicate with him through any other official.

It was agreed that subject to acceptance by the Association of County Medical Officers of Health, these recommendations should be forwarded to the Ministries of Health and Education.

Post-Graduate Education of Medical Practitioners in Public Health.

Dr. Jolly having taken the chair, Prof. Picken submitted the interim report of the committee appointed by the Council on November 26th, 1943, to consider the postgraduate education of medical practitioners in public health. The committee consisted of the following members: R. M. F. Picken (Chairman), R. H. H. Jolly, G. F. Buchan, J. A. Charles, Sir Wilson Jameson, Major Greenwood, G. S. Wilson, Alan Moncrieff, James M. Mackintosh, J. Johnstone Jervis, R. H. Parry, Sir W. Allen Daley, J. A. Scott, H. Stanley Banks, W. G. Clark, F. Hall, G. Lissant Cox, and Jean M. Mackintosh. N. D. Begg was later appointed in place of H. Stanley Banks, who resigned on leaving the country.

The committee had held ten meetings and has received helpful memoranda from members and others with knowledge of special educational and occupational problems.

Much time has been devoted to the training and experience appropriate for officers engaged in the sectional departments of public health, but the committee had been unable to complete this part of its deliberations because certain memoranda for which it has asked have not yet been received. In the meantime, the committee had been given to understand that an early submission to the General Medical Council of the Society's views on the courses of training and examinations for postgraduate degrees or diplomas in public health is desirable. The committee therefore submitted an interim report for the general approval of the Council. It hoped soon to deal with the reserved matters in a final report.

It was agreed unanimously that the interim report be forwarded to the General Medical Council and that it be printed in an early issue of *PUBLIC HEALTH*. (It will be found on p. 65 of the current issue.)

The cordial thanks of the Council were accorded to Prof. Picken for his initiative and leadership in the work of this Committee.

Salaries Committee.—The Committee reported that comments and suggestions received from the Branches, Groups and individual members on their draft proposals had raised a number of important and difficult issues which were delaying completion of their recommendations. They desired the guidance of the Council on a number

of points which would receive further consideration from the Committee. After discussion of such points it was agreed that the British Medical Association should be informed that the Society has made considerable progress with revisions of the Askwith Schedule and asking the Association to give the agreed year's notice as from April 1st, 1945, terminating the Askwith agreement.

A National Health Service.—Dr. G. F. Buchan reported that with the other members of the Society nominated on December 12th, 1944, he had attended a conference with representatives of the B.M.A. Council to discuss the second report of the Society on the Government's proposals for a National Health Service. After a friendly discussion it was agreed that the Society's report should be circulated to the Ministry of Health, to the bodies representative of local authorities, to other organisations concerned with health administration and to the Press.

Representation of the Society.—The following were re-elected to represent the Society on (1) The British Social Hygiene Council—Dr. J. A. Struthers; (2) The Smoke Abatement Society—Prof. J. Johnstone Jervis and Dr. Cyril Banks.

GENERAL PURPOSES COMMITTEE

A meeting of the General Purposes Committee was held on Tuesday, December 12th, 1944, at Tavistock House, Tavistock Square, London, W.C.1.

There were present Drs. N. D. Begg, J. Ferguson, W. M. Frazer, J. M. Gibson, F. Hall, C. E. Herington, J. W. Hunter, R. H. H. Jolly, A. Massey, A. A. E. Newth, Prof. R. M. F. Picken, Drs. Virginia Saunders-Jacobs, J. A. Stirling, H. C. Maurice Williams, J. Greenwood Wilson and F. T. H. Wood.

Apologies for absence were received from Drs. G. F. Buchan, G. Lissant Cox, James Fenton, Hugh Paul, J. J. Buchan, and Cyril Banks.

Election of Chairman.—Dr. J. M. Gibson was elected Chairman of the Committee for the session 1944-45. A cordial vote of thanks was passed to Dr. J. A. Charles for his untiring services as Chairman during the past year. The minutes of the meeting held on September 8th, 1944, as published in *PUBLIC HEALTH* (November, 1944, p. 26) were approved and signed.

Post-War Sanitary Administration.—Memoranda and correspondence in reference to this subject were received from the Metropolitan Branch of the Sanitary Inspectors' Association, the M.O.H. and Clerk of Uckfield R.D., the M.O.H. of Blyth, and others. It was agreed to forward to the Ministry of Health representations based on Para. 10 *et seq.* of the Memorandum submitted by the Metropolitan Branch.

Routine School Medical Inspection.—The Committee considered a joint report from the M. & C.W. and School Medical Groups upon a confidential questionnaire forwarded to the Society by the Ministry of Education in reference to the future of routine school medical inspection, more especially to ascertain what is considered medically desirable. After discussion and minor amendments the report was adopted for submission to the Ministry.

Employment of Married Women Doctors by Central and Local Health Authorities.—A letter referring to the exclusion or compulsory retirement of medical women from public health appointments on marriage, forwarded by the North-Western Branch, was referred to the M. & C.W. and School Medical Service Groups for early consideration and report.

Education Act, 1944.—Resolutions and correspondence were considered from the Home Counties Branch, the County District Group, Dr. E. D. Irvine, and others in reference to the position of school medical officers of Part 3 Authorities as affected by the new Education Act. After a full discussion it was agreed that Dr. Jas. Ferguson and Dr. Cecil Herington should draft a memorandum embodying general principles approved by the Committee for submission to the next meeting of Council.

National House-Builders' Registration Council.—On reference from the Council of the Society it was agreed to accept the invitation to nominate a representative of the Society on the National House-Builders' Registration Council. Dr. Arthur Massey consented to accept election in this capacity.

Proposals by Branches.—The following resolution was received from the Yorkshire Branch:

• That the Council of the Society be asked to consider the advisability of publishing, at stated periods during the year, all proposals made by the Branches, showing the action taken, and the results achieved.

The President said that Council and committees would note with sympathy the desire of Branches to be fully informed on the effect of their recommendations. As a general rule the minutes published in *PUBLIC HEALTH* served this purpose, and they would hear direct from their Branch representatives of certain other matters which could not be fully reported. But in some cases resolutions were

referred at once for consideration by appropriate committees, and perhaps in subsequent reports credit was not always given to the source of the suggestion. He hoped that Branches would make due allowance for lapses of this kind during the war period.

Fully Paid Life Membership.—On the recommendation of the Yorkshire Branch Dr. Josephine Coupland was elected a fully paid Life Member of the Society.

A National Health Service.—It was reported that the Council of the B.M.A. had given preliminary consideration to the second report of the Society on the Government's proposals for a National Health Service. The B.M.A. Council felt it would be of mutual assistance if representatives of the two bodies could meet informally for a discussion of the Society's policy, and in the hope that this suggestion would be accepted they had appointed the following representatives: Dr. H. Guy Dain (Chairman of Council), Dr. E. A. Gregg (Chairman, Insurance Acts Committee), Mr. R. L. Newell (Chairman, Hospitals Committee), Dr. F. Gray and Dr. Charles Hill. The conference would probably be called before the next meeting of the Council of the Society.

It was agreed to accept this suggestion and the following were elected to represent the Society: Dr. G. F. Buchan, Dr. James Fenton, Dr. J. M. Gibson, Dr. R. H. H. Jolly and Dr. Cyril Banks.

It was recommended to the Council that the President (Prof. R. M. F. Picken) and Dr. G. F. Buchan be elected to represent the Society on the B.M.A. Negotiating Committee in reference to the Government's proposals for a National Health Service.

YORKSHIRE BRANCH

President: Dr. J. A. Fraser (C.M.O., Yorks North Riding).

Hon. Secretary: Dr. J. M. Gibson (M.O.H., Huddersfield).

The inaugural meeting of the 1944-45 session of the Yorkshire Branch was held in Leeds, on October 27th, 21 members being present.

The minutes of the meeting held on September 29th were read, approved and signed.

A vote of thanks to the retiring President (Dr. E. C. Benn) was passed unanimously. Dr. Benn then invested Dr. J. A. Fraser with the President's badge of office, and installed him in the presidential chair.

It was resolved that the Council of the Society be requested to inform the Ministry of Health that, in the opinion of the members of the Yorkshire Branch, it is advisable that the relationship between the Sanitary Inspector and the Medical Officer of Health, as outlined in paragraph 1 of Article 27, of the Sanitary Officers' Regulations 1935, should be clarified by a statement from the Ministry of Health on the subject.

A discussion took place on the salaries of medical officers of health, and it was resolved that the following resolution be sent to the Council of the Society: That the Report upon salaries should be expedited and that any recommendations made regarding increases should be published as soon as possible.

SOME PUBLIC HEALTH PROBLEMS

Dr. Fraser then gave his presidential address. He thought there were several questions in addition to the White Paper on the Health Services which might occupy the attention of the Branch during the coming session. He stressed the need for progress in housing construction, the repair of houses capable of being put into habitable condition at a reasonable cost, the provision on a national scale of refrigerators for existing dwellings and of cooker-refrigerator units for new dwellings. Consideration should be given to the mass-production of cooking equipment suitable for the use of smokeless solid fuel; the production of such cookers in large quantities and at reasonable prices would assist in the diminution of domestic smoke, and at the same time be economical for the consumer. District heating and the provision of hot water supplies for groups of newly constructed houses should not be overlooked, and the installation of such services in existing blocks of flats should be encouraged.

There was need for research into up-to-date methods of refuse disposal and sewage disposal. The Garchey system was suitable only for large blocks of flats and there was need in rural areas for some method of conservation on the principles which had been so popularised in Indore by Sir Albert Howard. If sanitary engineers could devise some method which would not give rise to a nuisance but which would improve the fertility of the soil by supplying humus, a great step forward would have been taken in preventing soil erosion and in revitalising the agricultural land of this country now so exhausted after years of stimulation by artificial manures.

Dr. Fraser suggested, in the light of the proposed appointment of a professor of medical psychology at the University of Leeds, that the attention of medical officers of health should be directed to a greater extent than in the past to psychiatry and psycho-somatic medicine. The Central Council for Health Education was doing good work in the sphere of public health propaganda, but there was insufficient emphasis yet on the need for a sound mind as well as a

healthy body; he felt that much could be done by getting doctors interested in educating the adolescent on the basic principles of physics, physiology, and psychology. Dr. Fraser called attention to the many departments of central and local government which dealt with the care of children not residing in their own homes, and gave examples of the excellent work done by a psychiatric social worker who had been on the staff of the North Riding County Council for the last three years. He suggested that all welfare work in connection with children which could be done by local authorities should be concentrated into the hands of one group of personnel of those authorities and not distributed among various departments, which were sometimes at cross-purposes; the attention of voluntary workers in children's welfare should be directed towards the removal of those discordant factors which so frequently rendered difficult the proper mental and emotional development of children. He proposed to ask a well-known psychiatrist to attend one of the later meetings of the Branch to explain the points of view of the R.M.P.A. and to delineate a basis for co-operation between psychiatrists and medical officers of health which would render unnecessary the suggested appointment of a medical officer of mental health to each major local authority. It would also be possible to put to this psychiatrist the views of the members of the Branch about deficiencies in the present services, particularly in early mental illness. Dr. Fraser expressed his dissatisfaction with the present state of the law on supervision of milk both as an article of food and as a possible agent for the distribution of infectious disease. He pressed for pasteurisation to be made compulsory, save in sparsely populated districts, and to be more closely supervised by expert staffs, preferably by the County and County Borough Councils. He also suggested that in the rural areas the individual housewife should be encouraged to heat the household supply to 165° F., and that national publicity should be used to put this idea across.

In conclusion he asked that the members of the Branch should consider during the coming session: (1) the reform of the law relating to the care of children separated from their parents; (2) the reform of the law associated with the mentally ill; (3) the encouragement of research into conservative methods of dealing with sewage and vegetable refuse; and (4) the attainment of more adequate teaching of physical and mental hygiene in the primary and secondary schools.

An ordinary meeting of the Yorkshire Branch was held in Leeds on December 1st, 1944. Thirty-five members and one guest were present. In the unavoidable absence of the President, Dr. R. Watson consented to act as Chairman.

The minutes of the meeting held on October 27th were approved. It was resolved that the Council of the Society be asked to consider the advisability of publishing, at stated periods during the year, all proposals made by the Branches on the Government White Paper on a National Health Service, showing the action taken and the results achieved.

It was resolved that the Hon. Secretary should convey the sympathy of the members of the Yorkshire Branch to any relatives of Dr. A. Tait, M.O.H. for Kirkburton R.D., who died on November 10th, 1944.

Miss Chew, Area Representative of the Central Council for Health Education, presented two of the most recent films which had been sponsored by the Central Council, one on breast feeding, entitled "Flying Start," and one on posture, entitled "Round Figures."

CHILD CARE

Dr. E. D. Irvine, M.O.H. for Shipley, then dealt with points of interest about the Annual Conference on maternity and child welfare held in London on November 23rd and 24th, 1944. He thought routine dental examination and treatment of mothers and young children was implicit in the Minister of Health's appeal for greater activity in this sphere.

He reported that Miss Denby, an architect, condemned overspill from towns as a comparatively new, unnecessary and undesirable phenomenon; she thought the present density standards too severe.

The discussions on illegitimate children and on adoption revealed a general desire for strengthening the law in regard to consultation with the local authority in connection with adoption arranged without intermediaries. Periodic registration of foster mothers was also urged. Some stressed the need for residential hostels for unmarried mothers, ante-natally and post-natally (but not solely for them), attached in some way to a nursery and sited near sizable centres of employment. Reference was made to the desirability of altering the form of birth certificate (in the interest of illegitimate children). A national qualifying diploma for persons caring for children in institutions was considered necessary.

Delinquency was discussed at length: the most practical suggestion was a proposal to set up small specially staffed classification and investigation hostels for cases referred from the courts; and the deficiency in the provision of facilities for the care of "out of controls" before reaching court was pointed out.

Economic factors were considered by a number of speakers. The provision of trained nursing personnel to assist mothers at home in the care of babies (as in New Zealand and Holland) was Prof. Young's most novel suggestion. The Peckham Health Centre as a means of helping family life was discussed, and the need for further social facilities in country villages was emphasised. Home helps for a month after confinement, perhaps part-time in the second fortnight, were recommended by Dr. Standing, and reference was made to the American system of "sitters."

At the close of the meeting, Dr. E. O. Bowie gave an exhibition of posters and diagrams relating to the White Paper on the Future of Medical Services, which he had been able to borrow from an exhibition given in London.

SOUTHERN BRANCH

President: Dr. Catherine Avery (M.O.H., Winchester R.D.).

Hon. Secretary: Dr. H. C. Maurice Williams, O.B.E. (M.O.H., Southampton).

A meeting of the Southern Branch was held on November 22nd, 1944, 11 members being present. Dr. W. P. Cargill invested Dr. Catherine Avery with the presidential badge of the Branch. Dr. Avery then took the chair. The minutes of the meeting held on July 21st were approved as correct and signed by the Chairman.

Dr. C. H. Avery gave her presidential address on population and the family. After a discussion, in which all present joined, a vote of thanks was conveyed to Dr. Avery.

A meeting of the Southern Branch was held at Southampton on January 5th. Ten members were present, and Dr. Avery took the chair. The minutes of the meeting held on November 22nd, 1944, were approved as correct and signed by the Chairman.

It was resolved that the Southern Branch support the nomination of Prof. J. Johnstone Jervis as President of the Society for the year 1945-46.

It was resolved that the interests of school medical officers and their assistants be safeguarded on the lines suggested in the memorandum prepared by Dr. J. D. Kershaw, M.O.H., Accrington, on the operation of the school medical services in divisional executive areas under the Education Act, 1944, and forwarded by the Society of Medical Officers of Health to all members of the Group, as resolved at the meeting held on October 27th, 1944.

It was, after discussion, resolved that the Secretary submit to the Council of the Society the following recommendations of the Branch on the new salaries scales:—

1. Consideration should be given to the provision of quarters for married medical officers employed in institutions.
2. In view of the differences in the responsibilities of medical officers, local authorities should be given more guidance in the interpretation of minimum commencing salaries of senior medical officers, having regard to the number, nature, etc., of the population of the area.
3. In subsection (3) of the section III relating to senior medical officers, "£1,000 per annum" should be replaced by "minimum commencing salary."
4. Where a medical officer is both senior medical officer in charge of a special department and also medical superintendent of an institution—e.g., a tuberculosis officer who is also medical superintendent of a sanatorium—he should be paid the higher scale of salary.
5. The appointed "day" mentioned in subsection (2) of the General Conditions should be April 1st, 1945.
6. The added years mentioned in subsection (7) of the General Conditions should be eight (five years required to qualify plus three years' experience required under Section II (1)).
7. Special consideration should be given to districts whose population has been temporarily reduced as a result of the war, and to health resorts whose population is subject to seasonal fluctuations.
8. The conditions of service of each appointment should be as clearly defined as possible, including such matters as off-duty periods, annual leave, etc., on the lines of the Rushcliffe Report, and remuneration for extra duties—e.g., port health, etc.
9. Where a dual appointment is held, a resident medical officer having to undertake duties outside the hospital, he should be classified as a medical officer employed in a department.

It was resolved that the Salaries Committee should be asked to state under what conditions medical officers of less than three years' experience might be employed.

MIDLAND BRANCH

President: Dr. A. B. Griffin (M.O.H., Worcester City).

Hon. Secretary: Dr. H. Paul (M.O.H., Smethwick C.B.).

The third meeting of the session was held in Birmingham on December 2nd, 1944.

The President and 36 members were present. The minutes of the previous meeting were read, confirmed and signed.

Dr. J. R. Mitchell introduced a discussion on the medical aspects of the Education Act, 1944. The extension in the age range of children and young persons included in the new Act would call for a corresponding increase in the personnel responsible for the supervision of their health and their medical care. Local education authorities were required to provide for medical inspections, at appropriate intervals, of pupils in attendance at any school or county college maintained by them, and they also had power to provide for a similar inspection of senior pupils attending any other educational

establishment maintained by them. Dr. Mitchell suggested that the minimum number of periodic medical inspections between the age range of 5 to 15 years should be four, the first at the age of 5 years, the second at the age of 8, and the third and fourth at 12 and 14 respectively. If he were given two additional routine inspections he would like to make them at the ages of 6 and 7 years. The speaker next went on to discuss the machinery for special inspections, including those of children believed to be suffering from any disability of mind or body. He pointed out that in the past there had been no compulsory power to require parents to submit their children for medical inspection, but that Section 48 now gave this power. After dealing with the provision of medical treatment for scholars, Dr. Mitchell observed that one omission from the scheme outlined in the Education Act, 1944, was the failure to provide anything in the way of convalescent treatment. He also discussed the new procedure outlined for dealing with verminous children, and considered that exclusion was now inadvisable because it would be necessary to prove wilful default on the part of the parent to have the child cleansed. An interesting discussion followed. A vote of thanks to the speaker was carried unanimously.

It was agreed to support and encourage the formation of a school medical sub-group for the Midland area, and suggestions were made for canvassing assistant S.M.O.'s not at present members of the Society.

President: Dr. H. B. Binks (M.O.H., Stafford).

Hon. Secretary: Dr. H. Paul (M.O.H., Smethwick).

A special meeting of the Branch to consider the recommendations of the Council of the Society on the revision of the Askwith Scale was held in Birmingham on January 13th, with the President in the chair. There were 38 members present.

SECTION 1.—RESIDENT MEDICAL OFFICERS

The discussion turned on whether in view of the value of emoluments (board, lodging, laundry, attendance) £250 was not too high for a first appointment. Dr. McIntosh proposed and Dr. Clark seconded "that the figure £250 per annum be amended to £200 in those cases where there had been no hospital experience subsequent to qualification." Dr. Massey commented upon the desirability of not creating too many grades. The motion was lost.

At this point Dr. Massey, Chairman of the Salaries Committee of the Council of the Society, outlined the differences between the Askwith Scale and the new draft scale, mentioning some of the negotiating factors which had influenced the Committee. He stressed the need to reconcile the feeling that the medical officers' services should not be undervalued with the feeling that it would be unwise to present a demand which might prove to be totally unreasonable from a local authority viewpoint.

SECTION 3.—SENIOR MEDICAL OFFICERS

After some discussion on cases (a) where senior medical officers do not form part of a medical officer of health's department; and (b) where designation or calling in smaller authorities has no bearing on salary, it was moved by Dr. McIntosh and seconded by Dr. Ramage that the definition of "Senior Medical Officers" under this sub-section should be widened by the addition of the words "or having responsibility for the work of other medical officers." Some members thought that the upper limit of salary was not high enough but no resolution was passed.

It was moved that the wording of Sub-section (3) as set out in Section 2 for medical officers employed in Departments should apply throughout all sections. Dr. Massey pointed out that the recommendation had been confined to medical officers in departments because it was felt that this class needed most consideration. To bring all officers on all grades immediately to the salaries in the new grades carrying full increments for service to date would tend to antagonise local authorities. The resolution was declared lost.

SECTIONS 4 AND 5.—MEDICAL SUPERINTENDENTS AND DEPUTY MEDICAL SUPERINTENDENTS

It was felt by the meeting that the system of grading steps on bed numbers should be reviewed and that especially in the lower ranges of beds should be lessened. Residential emoluments are an asset the value of which are not generally recognised either immediately or remotely.

SECTION 6.—DEPUTY MEDICAL OFFICERS OF HEALTH

It was proposed that increments of £50 per annum should be increased to £75 per annum.

SECTION 7.—MEDICAL OFFICERS OF HEALTH

Discussion centred upon the advisability of loading scales based only on population, where special additional responsibilities were

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carried by Medical Officers of Health. No action was taken after Dr. Massey had explained the great difficulty of the Salaries Committee in keeping their recommendations as simple and clear cut as possible. It was thought that the Council would bear in mind the desirability of obtaining a suitable relationship between the salary of a medical officer of health who is responsible for all services with that of a medical superintendent.

GENERAL CONDITIONS

It was moved that this sub-section be deleted. The motion was carried unanimously.

EXTRA SUB-SECTION

It was moved that the following additional clause be added in this section: "When a medical officer is absent for a period greater than three months and his or her duties are undertaken by an officer of lower grade, then that officer should receive remuneration on the appropriate scale." The resolution was declared carried.

Discussion took place on whether marriage should terminate an appointment, and finally it was proposed by Dr. Brunyate and seconded by Dr. Downer that Sub-section (6) should be deleted. This resolution was carried.

Having regard to the difficulties of considering resolutions which if to take effect would necessitate alteration in the Superannuation Act, the meeting resolved that the Acting Secretary should note certain comments for consideration by the Council of the Society. These observations included: (i) that a medical officer should be permitted to retire at 60 years of age; (ii) that the number of added years granted should be altered from "not less than 5" to "between 5 and 10 years"; (iii) in support of these claims it could be advanced that a medical officer does not secure the same number of years of service at a small contributory rate as do officers who commenced in the lower grades of local government service.

NORTHERN BRANCH

President: Dr. J. B. Tilley (C.M.O., Northumberland).

Hon. Secretary: Dr. G. Hurrell (Tuberculosis Officer, Newcastle).

A meeting of the Branch was held in Newcastle-upon-Tyne on December 2nd, 1944. The President and 21 members were present. The minutes of the Annual Meeting held on October 28th, 1944, were read, confirmed and signed by the Chairman.

Dr. Hebblethwaite announced that he had attended the Council meeting in London on November 17th and stated that the Salaries Committee had issued their Draft Report, which was to be circulated to the Branches for observations. He gave members a brief outline of the important features of the report and suggested that an early meeting of the Branch should be held to consider it.

The Hon. Secretary referred to the concern felt by Mrs. Neville Rolfe, of the British Social Hygiene Council, at the poor response from local authorities for sets of the posters on "Population and the Family." She had offered to send a specimen set for display to members of the Northern Branch. Dr. Hebblethwaite stated that his authority had purchased a set of these posters and he would bring them to a meeting if the Branch so desired.

Mr. C. J. L. Thurgar, F.R.C.S., delivered an address on the administrative problems of cancer, and after a general discussion a vote of thanks was moved for his informative talk.

WEST OF ENGLAND BRANCH

President: Dr. J. F. Davidson, O.B.E. (C.M.O., Somerset).

Hon. Secretary: Dr. I. G. Davies (Deputy M.O.H., Bristol).

A meeting of the Branch was held in Bristol on December 13th, 1944.

Dr. Davidson was installed as President for the session. He gave an interesting address on methods of dealing with postural defects in the county of Somerset, and showed some photographs in illustration. A vote of thanks to Dr. Davidson was carried by acclamation.

MATERNITY AND CHILD WELFARE GROUP

President: Dr. Jean Mackintosh.

Hon. Secretary: Dr. Miriam Florentin.

Hon. Asst. Secretary: Dr. A. Mower White.

A meeting of the M. & C.W. Group was held in London on January 20th, at 2.30 p.m., and 41 members and guests were present.

The President was in the chair. The subject of the meeting was "Marriage Guidance," and the President introduced Mrs. Marjorie Hume, who was taking the place of Dr. Ethel Dukes at short notice.

Mrs. Hume said that there had been no preparation for marriage in the past, and the realisation of this had grown gradually over a good many years. It had been increasingly felt by doctors, clergy, magistrates, and social workers that some constructive action should be taken to stop the breakdown of marriage. It was found that about 75% of juvenile delinquents coming before the Courts were children from broken homes, and magistrates and probation officers were continually meeting cases of marital difficulty. In the last

quarter of a century there had been a change of public opinion in its attitude towards sex questions, chiefly for three reasons: (1) the emancipation of women; (2) scientific contraception; (3) the loosening of the strict moral standards of the pre-1914-war era. The time between the loosening of the moral code and the building up of a new one was a dangerous period, and a new code had not yet been built, chiefly owing to the present war and its emotional upheaval. The hopeful aspect of the present time was the interest shown by young people in gaining knowledge about sex and marriage.

Mrs. Hume described the work of the Marriage Guidance Council, which was formed early in 1938. Its aim was not entirely materialistic, and it tried to have the ethical background present all the time, moving along with the practical side. Its main functions were: (1) to act as a clearing house for the rest of the country, in order to put people in touch with the kind of help most needed, and to help them select the right books; (2) to provide education in the form of talks to young people; lectures to youth leaders, probation officers and social workers of all types; conferences for clergy, doctors and magistrates, so that knowledge could be pooled and discussed; (3) case work at the marriage-guidance centre, such as pre-marital cases, marital disharmony, and parenthood and family life.

Mrs. Hume said that marriage guidance began in the cradle. The children in schools should be taught biology in relation to the human species. Adolescents should have some ethical training. There should be university courses in guidance in citizenship and the relationship between men and women. There should be lectures for all young people about to get married, so that they started correctly and brought up the next generation in the right way.

After an interesting discussion Dr. Isobel Wright proposed a vote of thanks.

WELSH BRANCH

President: Dr. H. R. Tighe (M.O.H., Swansea C.B.).

Hon. Secretary: Dr. G. McKim Thomas (M.O.H., Cardiff R.D.).

A meeting was held in Cardiff on January 6th, 1945. The President and 16 members were present. The minutes of the meeting held on October 28th, 1944, were confirmed and signed.

The meeting considered the memorandum of the Society on their recommendations on revision of the Askwith Scale. After careful consideration and discussion the Secretary was asked to send forward the observations and recommendations of the Branch to the Society.

The Minister of Health has made new regulations. The National Health Insurance (Medical Benefit) Amendment Regulations, 1945 authorising a chemist, if he wishes, but without obligation to do so, to accept a casual prescription on a form provided by an Insurance Committee with whom he is not under contract. Where a chemist accepts such a prescription the terms of his contract with the Committee in whose area the place of business is situated will apply to the transaction, so that he will be responsible to that Committee in respect of it and claims for payment will be made to that Committee in the ordinary way.

COUNTY COUNCIL OF ESSEX AND URBAN DISTRICT COUNCIL OF THURROCK

Applications are invited from duly qualified medical practitioners possessing the Diploma in Public Health, for the appointment of two temporary Assistant County Medical Officers and Assistant Medical Officers of Health. The salary attaching to the appointments will be at the rate of £500 a year, together with war bonus, rising, subject to satisfactory service, by annual increments of £25 to £700 a year, but the commencing salary may be varied having regard to experience and capabilities. Forms of application may be obtained from the Clerk of the County Council, to whom they should be returned completed, accompanied by copies of three recent testimonials, immediately. Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN,
Clerk of the County Council.
A. E. POOL,
Clerk to the Urban District
Council of Thurrock.

County Hall, Chelmsford.
January 26th, 1945.

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EDITORIAL

Future of War-time Nurseries

There are indications that the purpose for which the war-time nurseries were established may soon vanish as the calls for married women labour in war industries decline. Much controversy has ranged around these: their cost has been called to account; allegations have been made and refuted about risks of infection in them; they have been criticised for assisting to break up the already gravely undermined family life of this country. Medical officers of health should lose no time in examining the position in their own areas with the object of ascertaining the peace-time value of nurseries, for if they can serve a useful purpose when the war is over there are already advantages in adapting these war-time ventures to our purpose.

The problem of the nursery for the young child in peace-time can be divided into two distinct parts—residential, and day accommodation. There is an increasing need for residential cots outside the hospital, with highly skilled staff who combine the best features of the hospital-trained nurse with an outlook of preventive care. There can be no more suitable body to run such institutions than the maternity and child welfare authorities, who have for long been entrusted with the development of schemes for the welfare of the young child. Here can be placed for short periods of time the illegitimate baby, the baby of the mother confined or ill, and the weakly infant discharged from hospital or needing a special diet. The successful functioning of schemes for illegitimate babies at the present high rate may call for a cot for every 20,000 of the population to be used for varying periods from 14 days to three months. The problems associated with rehabilitating the mother who has had an illegitimate baby are many and varied, and commonly call for provision of this character during the period of readjustment. When adoption has to be undertaken it is a great advantage to be able to place the baby for supervision in a nursery for 14 days or so and thus be able to assure the adopting parents with some degree of confidence that the baby is suitable.

The demands for residential nursery beds from mothers about to be confined or who have fallen ill have been increasing in recent years. This is one of the measures of the growing importance attached to child welfare, for many of the temporary arrangements made to meet such situations have in the past been unsatisfactory. It is significant that so many of the speakers at the recent M. & C.W. Conference in London, on the rehabilitation of family life should have stressed this need both for the baby's sake and to relieve the mother's anxiety. There can be little doubt that nursery cots filled from such homes are assisting to integrate and not disintegrate

the family. What is the exact number of cots required clearly must depend a great deal on the character of the area: possibly something of the order of one cot to 15,000 of the population. There is likewise a growing call for somewhere to put weakly babies, those that are not fully thriving and yet not organically ill, mainly in need of dietetic care—such are better away from hospital, with its added risk of infection. Welfare authorities might help appreciably in the fight for infant life by adding for such purpose one cot for each 60,000 of the population. Over-all provision of cots for the three purposes might be of the order of 1 to 7,000 population.

The problem of the crèche is of quite a different character, and cannot now be divorced from that of the nursery school which, under the Education Act, 1944, Education Committees have to establish for children down to the age of 2 years wherever there is a demand. War-time nurseries have accommodated children from 0 to 5 years of age, with a teacher in charge of the toddler (and in some cases the twennie) group during school hours. Viewed from the aspect of child welfare these nurseries have been a great success. Staffed on a generous basis, for which the Ministry of Health should be congratulated, they have played a conspicuous part in maintaining the health of the war workers' young children and also in training the war worker in child care through the frequent daily contacts with skilled nursery staff. The bogey of infection, if not entirely banished, has at least on closer inspection been shown to be less frightening than many imagined. No doubt success in this has been due to the high rate of staffing and the great care given to training nursery staffs in preventive technique. Many who have considered the problem of the crèche and its relation to the fundamental need to maintain, indeed recreate, family life in this country, are disposed to regard the crèche, like its sister the residential nursery, as a means to strengthen rather than weaken the family. The physical character of many English homes is far below what it should be and submits the mother of a growing family to a great and continuous strain. Is not this strain likely to weaken the family tie? There can be no certainty on this point, but it is reasonable for maternity and child welfare authorities to experiment in the crèche as a peace-time measure.

In view of the success of the war-time nursery as a combined school and crèche, authorities might do worse than continue the experiment in peace-time. Each standard nursery on the Ministry of Health pattern which was built to accommodate 45 children could provide a nursery school for 2 to 5 years of age of 30 places and a crèche for 0 to 2 of 15 places, and the costs could be shared as two-thirds Education and one-third M. & C.W. Payment for admission to the M. & C.W. section might be on a minimum of 1s. 6d. a day up to 3s., according to financial circumstances, and admission

should be limited to babies from homes investigated by the health visiting staff and found to be in need of relief; admission might also be extended to babies of mothers in whole-time employment and in other special circumstances. This combination of crèche and nursery school will have the advantage that the hours of opening might be extended beyond the school period for certain children of over two years, thus assisting the mother in work. No doubt there would be problems to solve as regards varying holidays for teachers and nurses, and that of matron and head teacher, but the war years have shown that these are not insurmountable.

The establishment of residential nurseries and crèches offers scope for training nursery nurses in conjunction with the Association of Nursery Training Colleges, and this in itself can be of considerable value to the nation. Girls of 16 who enter for such training can have two years' valuable experience at a time when few other professions are open to them, and many enter at 18 for the full course of training as State-registered nurses in general hospitals with a valuable knowledge of the normal child and an appreciation of the meaning of preventive measures which should be of the greatest benefit to them.

Spearheads of Industry

Those accustomed to attend conferences may be excused a little cynicism. Many conferences consist of a series of well-prepared papers putting in admirable form what everybody already knows, leaving those who have delivered them or heard them with a feeling of something done which might just as well have been left undone, a conviction usually confirmed when the printed report is seen. But the report of a conference which has just come into our hands* is a lively exception to a depressing rule. It is of a conference held towards the end of last year under the auspices of the Industrial Health Research Board on "Health Research in Industry." It contains much information about detailed researches, especially in a paper by Dr. Donald Hunter, physician in charge of the department for research in industrial medicine at the London Hospital—a department endowed by the Medical Research Council. What he had to say on industrial poisons, on dusts, and so forth makes almost romantic reading. But, of course, one department in London can touch only the fringe of the problems presented by industry. There should be more of these departments, and it would be at once an act of benevolence and of prudence if princes of industry established chairs of industrial medicine in universities and hospitals. It is not merely a question, as Dr. Hunter said, of arranging for a diploma in industrial medicine; the first thing is to make the industrial medical officer a good doctor: "It is easy to be a specialist, but by no means easy to be a good doctor."

Sir Edward Mellanby, in opening the conference, spoke of the Industrial Health Research Board as having been "cluttered up" between the two wars by an accumulation of spearheads, by which he meant finished pieces of research work. But what, he asked, is the good of a spearhead without a shaft and without a strong arm to hurl it? The facts relating to such questions as rest pauses, hours of work, pre-selection of workers, avoidance of accidents, humidity and ventilation, had all been ascertained and tabulated and were available for anybody's taking. But they were left unnoticed until the present war began, and then their value came to be more widely recognised in the development of an efficient and healthy industry. Two years after the war they may all be forgotten again unless industry itself has become health-conditioned and is prepared at some immediate pains and sacrifice to adopt an enlightened point of view. It is up to both employers and trade unions to see that these spearheads, to keep to Sir Edward Mellanby's figure, do not rust in the backyard, but are fashioned into effective instruments and are used with skill and precision.

The conference heard two points of view, those of the management and of the worker, the one by Lord Forrester,

who is managing director of the Enfield Cable Works, and the other by Mr. G. A. Isaacs, now Chairman of the Trades Union Congress. Two points of view, but fitting quite smoothly the one into the other. Lord Forrester thought it to be flogging dead horses to talk about a 40-hour week or an 8-hour day. The least measure of time they ought to take, he said, was a year. The spacing and duration of the breaks in the year may be more vital to health than the spacings in the 24 hours. He also touched on the problem of sanitation in factories, and mentioned the curious fact that the only really worthwhile publications on industrial lavatories were produced by the Nazis in Germany just before the war. One went over factories in this country, said Lord Forrester, and was aghast at the monstrosities—architectural, engineering, and hygienic—perpetrated in the name of sanitation. Another of Lord Forrester's suggestions was that the whole of the Factories Acts and Regulations should be taken down from the wall and put decently together in an indexed book which would be available in every factory, large or small, in a proper place for all to consult it; and periodically a factory newspaper should be placed on the wall giving to the ordinary man the essential knowledge as it became available.

There's the rub—how to get it across. As Mr. Isaacs pointed out, the reports on research work need interpretation. They are useful to experts and technicians, but they are lost to the great bulk of the people. He suggested that more might be done by providing popular pamphlets to bring home to workers in everyday language what has been discovered and established. That sounds, of course, very commendable, but as one speaker afterwards reminded the conference, the Industrial Health Research Board has itself put out a number of pamphlets conveying elementary information, illustrated by simple diagrams, to be read, almost, as one ran; yet he had found—and we can well believe it—that after they had been circulated for a sufficient time in the factories the reaction to them on the part of the workpeople was disappointing. They had not read them, or, if they had, the information had not sunk in.

At a recent meeting of factory workers a teacher from the Ministry of Production gave one of a series of lecture-demonstrations on certain of the processes which these men had to carry out at the bench or elsewhere. The demonstrator was perhaps a born teacher; at all events he had taken pains to acquire the teaching technique, and he did it in such a way as to hold the attention of those men even over procedures which were everyday commonplaces to them. He showed them how to carry out their work with expedition, certainty, and economy of movement, and they were greatly interested. Perhaps in health education we have taken too much for granted, and the same kind of trouble will have to be taken to get certain facts of hygiene and health precaution across to those most concerned.

The Royal College of Nursing is much disturbed at the bleak prospects facing senior members of the Ministry of Pensions Nursing Service on retirement. This service came into being at the end of the last war to provide nursing care for permanently sick or disabled ex-Servicemen. It was largely recruited from sisters who had served with the Q.A.I.M.N.S.R. or T.A.N.S., and was not expected to be a permanent service. Ten years ago the Ministry adopted the Federated Superannuation Scheme for its nursing staff, but even so the pensions accruing to members who have retired or are now due to retire are wholly inadequate. The pension for a charge sister who joined the service in 1920 may actually amount to no more than £34 2s. 10d. per annum, with no supplementary old age pension till the sister reaches non-contributable age. The Council feel that such a situation cannot be tolerated, and have agreed to ask the Minister of Pensions to grant additional retiring allowances, based on salary plus emoluments, to all sisters who were in the service prior to the introduction of the Federated Superannuation Scheme.

The Medical Research Council have appointed Professor A. A. Miles, F.R.C.P., of the Chair of Bacteriology at University College Hospital Medical School, to their staff at the National Institute for Medical Research, as from October 1st, 1945, with a view to his becoming Director of the Department of Biological Standards on the retirement of Sir Percival Hartley, F.R.S., next year.

ONE HUNDRED YEARS OF PUBLIC HEALTH

A REVIEW OF THE FIRST AND SECOND REPORTS OF THE COMMISSIONERS ON THE STATE OF LARGE TOWNS, 1844 AND 1845

By T. A. LLOYD DAVIES, M.D., M.R.C.P.,
Medical Officer, Boots Pure Drug Co., Ltd., Nottingham

In 1843, the sixth year of her reign, Queen Victoria appointed a Royal Commission to inquire "into the Present State of Large Towns and Populous Districts in England and Wales with reference to the Cause of Disease among the inhabitants . . . and how far the Public Health and the Condition of the Poorer Classes of the People of this Realm and the Salubrity and Safety of their Dwellings, may be promoted by the amendment of such Laws, Regulations, and Usages." The Commissioners were presided over by the Duke of Buccleuch and Queensberry. They numbered 12, excluding the president, and included two physicians, Lyon Playfair and David Boswell Reid, and one surgeon, Richard Owen (Hunterian Professor of the Royal College of Surgeons). The first meeting was held on June 3rd, 1843; the first report was issued on June 27th, 1844, and the second on February 3rd, 1845. A mass of evidence was heard, and the reports and recommendations were set out in extreme detail. The Commissioners also visited towns, and considered replies to a questionnaire sent to local committees; they placed little reliance on the questionnaire, however, as "it appears that the local statements and opinions on which is deemed to be good, can only be received with reference to the imperfect standard known in those places."

Sewerage, Water Supply, and Overcrowding

The sewerage system—if such a name can be applied—was a maze of local undertakings, mostly controlled by Commissioners of Sewers with inadequate powers, some acting under statutes of Henry VIII. Numerous witnesses were examined on this subject, and Lt.-Col. Grant and Mr. J. W. Unwin summarised the legal position thus: "the law of Henry VIII certainly is not exactly suited to a populous neighbourhood." The Commissioners concluded that, unless sewers built under powers but recently taken by many towns were efficiently and economically constructed, and unless sufficient water was supplied to cleanse them, such drains only "extended existing evils." Dr. E. Rigby, senior physician to York Road Lying-in Hospital, reported that in spite of the greatest attention paid to cleanliness in every respect—the wards being left open night and day for weeks, and fumigated, the walls being limed and painted, and the beds thoroughly cleaned, fumigated, repaired, and frequently renewed—puerperal fever reappeared time after time, sometimes immediately after reopening the hospital, and occasionally produced "frightful ravages." In the immediate neighbourhood of the hospital were "upwards of 1,500 ft. of open ditches, receiving the drainage of the poor and dense" quarters. With much difficulty the Commissioners of Sewers were "induced, although with much reluctance" to clean and roof over some of these ditches, but when the ditches were being cleaned the mud, instead of being removed, was spread over the adjoining ground. In spite of this work, puerperal fever continued. An elaborate system was installed for the ventilation of the wards, but "much opposition was experienced from the female attendants, and great difficulty in preventing them closing the different valves for admitting fresh and emitting foul air." At last, two reliable house-surgeons were appointed, and these gentlemen, carrying out the order for the maintenance of ventilation "in spite of much opposition and personal annoyance," succeeded so well that "not the slightest trace of puerperal fever" occurred from July, 1843, to April, 1844.

Dr. Reid described the ditches as "black and stagnant, and in constant ebullition from the disengagement of gas." He defined puerperal fever as a disease resulting from a "vitiated state of the blood arising from the introduction of some (usually animal) poison into the circulating current." Mr. J. Toynbee, F.R.C.S., was concerned that scrofula was

caused by bad drainage. "In some streets and courts there are no sewers; in others, in which there are sewers, there are scarcely any drains from the houses into the sewers, and the gully-holes are so far apart that the slops thrown out from the street door mix with the dirt of the street, and very little fluid appears to arrive at the sewer." An appalling standard of overcrowding existed; in 1842, Mr. Weld, at the urgent request of Lord Sandon on behalf of the Statistical Society, conducted "a house-to-house visitation," to find that 1,465 families occupied 2,175 rooms and 2,510 beds. (See Table I.) Dr. John Liddle, M.O. to Whitechapel Union, said, "Most of the poor people with large families find great difficulty in procuring lodgings." Mr. Thomas Ashton, a manufacturer of Hyde, near Manchester, laid in piped water to 320 labourers' houses owned by him, for a charge of 3d. a week, and was in no doubt that the tenants welcomed it, were cleaner and healthier, and found this arrangement cheaper than fetching and paying for water.

The Registrar and Assistant Relieving Officer of the Mile End New Town, Mr. Charles Hastings Rich, stated that in an especially notorious part of his district a sewer ran down High Street, Well Street, and Silver Street: otherwise there was only a surface drain, which discharged into a black ditch which emitted a "foetid bad smell." The ditch ran along the side of Underwood Street, part of a populous district. Perhaps because he himself had had to pay twice in the last six years, Mr. Rich was particularly moved by the fact that a sewer rate—the benefits of which seem somewhat doubtful—was charged. Typhus was prevalent. Many instances of families occupying one room were known to Mr. Rich; this room was used as a workshop (especially by weavers), with the bed in the centre of the room and the children's beds "in other parts." By no means an uncommon additional use of this room was the storage of corpses for several days until burial. The worst nuisance in this neighbourhood was committed by a Frenchman, M. Poittevin, who bought night-soil and baked it to form manure. As the result of many complaints, the nuisance had been abated for two months by the use of a "great deal of chloride of lime."

Mr. James Cubitt was emphatic that courts and alleys should be wide enough to admit a cart, and that no house should be built except where there was a public way. He thought back-to-back houses should be allowed if anyone wanted them, but he himself never built them. He suggested that water-closets in back-to-back houses might be in the upper part of the house to avoid offence or injury. He estimated the cost of a water closet at about £10 to £15 more than a common privy—an estimate which was confirmed by Mr. Howell, on whose detailed estimate Mr. Cubitt was asked to comment. At the end of very lengthy evidence, Mr. William Hosking, Professor of Architecture in King's College, remarked: "Skirting boards, as commonly applied in the houses of the poor, merely encase dust and vermin, and mask the chinks by which air is admitted to rooms in cold draughts when the doors and windows are shut."

Much time was taken in hearing evidence on the best way to construct sewers and water-closets, and whether these needed flushing with water. Detailed calculations of costs were submitted, and much of the discussion was about the need for sewer bottoms. Mr. R. Kelsey, commissioner of sewers for the City of London, submitting diagrams of stooping and crawling men, deduced that a sewer should be not less than 30 in. by 24 in.; the cost of such a sewer was 9s. 9d. a foot. In the years 1833 to 1842, the City of London spent £121,509 in the construction of sewers. Mr. S. O. Foden, architect, estimated the cost of installing a water-closet to be £4 (assuming water to be on the premises), which repaid with 5% interest over a period of 30 years made a weekly rental of 1½d. Mr. W. E. Hickson, builder, after making some general remarks about sewers, objected to the window tax, as even an opening 1 foot square, unglazed, opening into a privy or closet was liable for tax. "In the present state of the revenue" he did not expect to see the tax repeated but to avoid putting a premium on "defective construction" he suggested assessing houses according to their size as requiring a specified number of windows, and then levying the tax whether the windows were present or not.

* *Health Research in Industry*. Industrial Health Research Board (M.R.C. (Proceedings of a conference held September 28th, 1944, 1945. H.M.S.O. Price 6d. net.

Mr. James Braidwood, superintendent of the London Fire Brigade, was mainly interested in a good water supply for putting out fires, and if his opinion of the defective work of builders was correct some sympathy is due to him. In the years 1833 to 1842, there were 5,774 fires, the most frequent causes being: unknown, 1,401; curtains, 1,191; flues, 660; stoves, 104; among the remainder were bug-hunting, 2; burning a straw bed, 1; cats, 5; floor felting, 1; gunpowder, 1; hand grenade, 1; incendiaries, 52; reading in bed, 8; thawing water pipes, 2.

Stocking Weavers

Some interesting evidence was given by Mr. John Brooks, who was originally a stocking weaver living with his father, mother, grandfather, and five brothers and sisters in three rooms ("the house-room and two chambers above") at Hinckley, Leicestershire. The house had a "very convenient back yard, about six or seven yards wide" with a dunghill in the middle, and a "necessary" which for 20 years of Mr. Brooks' life was a tub, emptied in the morning on to the dunghill. All water was fetched from pumps in the street. Hinckley had one factory—to which the Factory Act did not apply—where children worked from 7 a.m. to 9 or 10 p.m., and on Saturday morning until 11, 12 or 1 o'clock. Children started to work at the age of three years, and until five years began work each day at breakfast time, and worked at times when the other children were at school; a child aged five worked nine or ten hours. Mr. Brooks stated that in Leicester there were two sorts of weavers—the master stocking weavers who have ten or 20 looms under their care, and the journeymen. Sunday was spent by those "who inhabited the low districts" by "lying a-bed" or "exchanging fowls" or "bartering away their dogs," and in the afternoon "ranging the fields." They did not go to the publichouses because they could not afford it ("except in a few instances where a poor man gets the earnings of his children; he might then go and spend them, but he must rob his children if he does"). But "those who are not able to make a decent appearance at a place of worship," as was the common practice on Sunday evenings, "congregate together . . . and send for a newspaper from a publichouse." One stalwart individual, called upon to pay poor-rates, though he pleaded he was unable to pay as he had a family, dared to work on Sundays; "but he did not continue it for beyond one or two Sundays," owing to the reproaches of the "respectable people." Mr. Brooks stated emphatically that, given the opportunity, the workers would keep their houses clean and "improve their condition," but the fees of the Mechanics Institute were too high. The advantages of allotments were "great and many."

Tuberculosis and Unhealthy Workshops

Dr. W. A. Guy's evidence was mainly about the incidence and cause of consumption. Though the Registrar-General recorded nearly 60,000 deaths a year in England and Wales due to consumption, Dr. Guy considered that only 36,000 were true pulmonary consumption. He ascribed the high morbidity in young women to the fact that "the number of females who work in their own rooms bears a much larger proportion to those who are engaged in workshops than in the case of men." "Stooping and constrained posture" greatly influenced pulmonary consumption, and Dr. Guy supported this theory by reference to the high incidence of consumption in compositors compared with pressmen, which was "the more striking as the pressman is notoriously more given to habits of intoxication than the compositor." Dr. Guy believed the opinion that consumption was a national disease was "vulgar prejudice" and blamed the English habit of always "croaking about something or other." He proceeded to make some shrewd and caustic comments on the unhealthiness of many workshops:—

"As far as I have had an opportunity of observing, the history of a London workshop is this: A man begins by employing a few hands in a house often but ill adapted for an ordinary dwelling-house, and as his business increases he contrives to add one low apartment to another by knocking down partition walls and making such slight alterations as suit his immediate purpose. He contrives

by this means to accommodate an increasing number of men, and the only practicable limit to that number is the want of mere standing or sitting room, as the case may be. He warms these rooms by a stove, by steam, or by hot air, and lights them with gas. The consequence is that the workmen are exposed at the same time to a high temperature and a foul and stagnant atmosphere. This combination is carried to its highest degree in the tailors' workshops, and I have been told more than once by the journeymen tailors themselves, that they have been obliged to strip to the very skin that they might be able to bear the intense heat to which they are exposed. In buildings intended for workshops more space is given to the men, but they are usually constructed on very bad principles. The whole building often forms one space, divided by floors perforated by a common staircase. If a steam-engine is employed it is generally to be found in the lower compartment of this building, so that the heat rises from this into the upper rooms, and mingling with the foul air of the intermediate floors, ascends to the highest flat, where the hot and foul air collects in great abundance. Such a building as this once gave me the opportunity of a very striking comparison: 15 men were employed on the second floor, and 17 men in precisely the same way on the third and uppermost floor. On making personal inquiries of each of the men respecting his health, four only out of the 15 on the second floor made any complaint: one was subject to indigestion, a second to a cough, the third to ulcers of the leg, and the fourth was what might be termed a valetudinarian. But of the 17 employed on the uppermost floor, three had had spitting of blood, two were subject to affections of the lungs, and five to constant and severe cold. Ten of these 17, therefore, were subject to diseases affecting the chest, while only one of the 15 in the room beneath had a disease of this nature. The men themselves, who had been for a long time in the employment of the same master, were fully alive to the injury which they sustained, and had made frequent representations to their employer. Some unsuccessful attempts had been made to remedy a state of things mainly dependent upon the faulty construction of the building."

Further observations by Dr. Guy confirmed the fact that men in crowded workshops were less healthy than in more commodious premises. (See Table II.)

Liverpool and Preston

The evidence given by Dr. W. H. Duncan about the health of Liverpool recorded joyfully that the inhabitants inhaled the effluvia of uncleaned cesspits only in extreme dilution, but—perhaps this was a matter of pride to Liverpool—23 children at a boarding school in Clapham were affected and two died from convulsions ascribed by the medical attendants to hydrogen sulphide from the contents of a cesspool scattered near the children's playground. In Preston, length of life was strictly related to social class. The Rev. J. Clay, who calculated the length of life with great exactitude to within one-third of a day, stated that the average age of deaths (after 21 years of age) was, among gentry and professional men and their families, 61-65 years; tradesmen and their families, 54-73; operatives and their families, 50-55 years. The percentage dying under five years of age was: gentry, 17-57; tradesmen, 38-22; and operatives, 55-42. Mr. Clay goes on to state that in 922 dwellings, 2,400 persons lived and slept in 852 beds. In 84 cases four persons slept in the same bed; in 28 cases, five persons; in 13 cases, six persons; in three cases, seven persons; and in one case, eight persons. "And in addition a family of eight on bed stocks covered with a little straw."

If the inhabitants of Preston were strong enough to resist the danger of death at an early age, or the danger of multiple sleepings arrangements, perhaps the chance of old age was increased, for Mr. Clay proceeds to state that an old woman, aged 102 years, whose "activity of limb is equal to that of many women of 50" lived in a cellar in King Street, together with a daughter aged 70 years.

In the year 1843, the sick clubs in Preston had some interesting experiences. (See Table III.) According to Mr. Clay, "The Tee-total Society (of which, however, the numbers are rather small . . .) . . . suffer the shortest average duration of illness. . . . The Rechabites, who might be expected to occupy a creditable place nearer the tee-totalers are not, in all cases, as appears from the returns, worthy of the name they assume." Burial insurance for infants is succinctly criticised thus: "Feelings created by the anticipated payment from the burial club, should it die, may sometimes be

stronger than the anxieties for the preservation of life." One of the worst evils to child life was the boarding-out of children whilst the mother, because of economic circumstances, worked at the factory. "The infant, when a few weeks old, is committed to the care of a nurse, who exposes it to cold, feeds it improperly and drugs it with 'Godfrey'." Twenty-one druggists in Preston recorded "Weekly Sales of Narcotic Drugs and Children's Cordials" amounting to: "Godfrey's Cordials, 23 lb. 5 oz. 5 dr.; Infants' Preserve, 18 lb. 4 oz.; Syrup of Poppies, 16 lb. 9 oz.; Opium, 1 lb. 1 oz. 6½ dr.; Laudanum, 7 lb. 8 oz. 2 dr.; Paregoric, 9 oz."

Ashton-under-Lyne

In Ashton-under-Lyne, Mr. J. R. Coulthard reported that the Earl of Stamford's Court-leet regularly held sittings every six months and heard complaints about abuses. If the abuses remained unabated, fines were levied and collected "without the slightest difficulty"; some persons, however, "contumaciously refusing to pay until their goods have been levied upon and even sold under the hammer." If a certain Mr. Wood did not "provide eight necessities in Crab or Wood Street" he was to be fined £1. 19s. 11d.; this amount seems to have been the standard forfeit for all offences. Perhaps because of Lord Stamford's activities, Ashton-under-Lyne seems to have been in a better sanitary condition than many towns, and plans are reproduced of public baths about to be built at a cost of £4,500. Ashton does, however, seem to have been deficient in hospital services, as patients went to Manchester Infirmary, much to the distress of Dr. J. K. Walker who, writing from Huddersfield, advocated the establishment of a children's hospital in Ashton. Narcotic cordials, especially Godfrey's, caused a lot of trouble.

In the hope that society would safeguard itself against epidemics Dr. T. Laycock gave an historical account of the epidemics suffered by York in the sixteenth, seventeenth and eighteenth centuries. Several interesting records from parish registers for the year 1604, when there was an epidemic of plague, are quoted.

Overcrowding in Nottingham

Because of the lammas tenures around the city, Nottingham presented a particularly bad example of overcrowding. Of a total of 10,934 houses, 8,000 were not provided with lavatories, 7,000 were built back to back mostly around courts (one of which was appropriately named Cabbage Court), with alleyways less than 3 ft. wide, and in a district off Glasshouse Street, by no means exceptional, 4,200 persons lived in an area of less than 220 yards square. The only bright thing about Nottingham seems to have been the Trent Water Company; its Engineer, Mr. T. Hawksley, did much to improve conditions by providing a continuous supply of water for 24 hours, in contrast with the Nottingham Old Water Company, who seem to have cut off the water at periods during the day and night. In the words of Mr. Hawksley, there were "accumulations of filth and moisture attended with the worst and most fatal consequences. . . . Cabbage Court, in Charlotte Street (an elevated portion of the town) and Morley's Yard on Leen Side (a low part of the town) may be particularly instanced amongst many other places of somewhat inferior notoriety."

Birmingham

Birmingham, except perhaps in the principal streets, emptied its refuse and "the contents of the ashpits and privies in the night into the streets," whence it was improperly collected. Reading between the lines, those studying Mr. R. A. Slaney's report may wonder if the filth was collected at all. Describing the wretchedness of bad housing and filth, he says:—

"Amidst these scenes of wretchedness, the lot of the female sex is much the hardest. The man, if, as is usually the case, in employment, is taken away from the annoyances around his dwelling during the day, and is generally disposed to sleep soundly after his labours during the night; but the woman is obliged to remain constantly in the close court or neglected narrow alley where she lives, surrounded by all the evils adverted to: dirty children,

domestic brawls, and drunken disputes meet her on every side and every hour. Under such circumstances, the appropriate employment of a tidy housewife in brushing, washing, or cleansing, seem vain and useless efforts, and she soon abandons them."

South Wales Towns

Swansea was no better than English towns: "the courts, streets and passages are not only kept filthy but are disgustingly dirty." In addition, the copper works emitted "sulphurous, sulphuric, arsenous and hydrofluoric acids," which together with other products of the combustion of coal were known as "copper smoke." Sir H. J. de la Beche, one of the Commissioners, stated: "Many plants cannot be grown within the range of these vapours, even there they become, as it were, diluted with pure air, the colour of *Convolvulus major* has been known to be changed to red after a few hours' driving of the copper smoke . . . and cattle that feed upon the grass, where it can grow within the range of much of this smoke, are affected with a great thickening of the knee joints and the teeth suffer, so that they must be frequently removed from such localities to preserve them." Continuing his survey of South Wales towns, Sir de la Beche observed: "Merthyr Tydfil, with Pen-y-Daren and Dowlais, may be regarded as chiefly a large cottage town, without any public care for supply of water, drainage, or cleansing, the open character and small height of its straggling buildings, and consequent exposure to sun and air, saving its population from still greater evils than those to which they are now exposed from the filth so abundant in it." Perhaps the reason for this was the expansion of the population of Merthyr Tydfil from 7,705 in 1801 to 37,264 in 1841, 15,151 of this increase taking place in the last ten years. Death and disease were distributed according to class rather than occupation, and the average age of colliers, iron miners, and puddlers, was about the same, except that the women folk of the puddlers tended to be younger, the average probably being reduced by death, than in the other two groups. The average weekly wages were: colliers, 17s. per week; miners, 14s.; labourers, 12s.; masons, 14s.; firemen and puddlers, 20s. The increase in population of Brecon, an agricultural town, provides an interesting comparison with Merthyr Tydfil: a population of 2,576 in 1801 increased to 5,214 in 1841, but only 188 of this increase occurred in the last ten years. By contrast, Brecon appeared reasonably sanitary.

Towns in Lancashire

A painstaking and detailed report on large towns in Lancashire by Dr. Lyon Playfair makes melancholy reading. All the abuses prevalent in other towns are repeated, but overcrowding is even worse and sanitary arrangements almost non-existent. In Manchester, Mr. Neal, superintendent of nuisance inspectors, stated "that in many densely populated parts of the town the inhabitants (who are chiefly of the poorest class) are subjected to great inconvenience for want of necessities. From a report made by the superintendent in January last, it appeared that there were 645 houses in the neighbourhood of Oldham Road and St. George's Road, with families of eleven persons on an average, making an aggregate of 7,095 persons, having only 33 petties (necessaries) for their convenience, which, as might be supposed, are generally in a most disgusting and filthy state." The evils of similar conditions in Liverpool were described by Mr. Ramsay:—

"On the fourth or fifth floor of a house within a short distance of where I now am, for example, the whole of the occupants of that floor, consisting of several dwellings, were attacked during the last severe visitation of fever in 1838, and the whole floor repeatedly cleared by the inhabitants being sent to the infirmary. A fresh set of tenants were no sooner inducted than the disease again broke out, and again the floor was tenantless. It was occupied and re-occupied several times with similar results, till at last there was difficulty in finding occupants on any terms. The proprietor lived in the country, and, beyond getting his rents, took little interest in the matter; but on being urged to get the whole floor thoroughly lime-washed, he did so, and fever, till within the last month, has not been known in it since."

Dame schools were utterly condemned. "In one case 36 children were crowded in a small room above a shop belonging to the mistress, who had to leave her children at the call of

every customer. Some of the rooms used as schools are so small that the children have not room to sit down. In one instance, each scholar had an area to stand in of only 1.4 square feet, and a space to breathe in of 2.57 cubic feet. The influx of "migrant Irish" into Liverpool undoubtedly presented a serious problem: "They make this a backdoor to Ireland and they die here." One steamship company alone brought 32,952 labourers a year from Dublin. Among eight Lancashire towns in which the lodging houses were inspected, those of Wigan, where 18 houses were visited, excelled all others: the average number of beds per house was 6.7; 100% of houses had sitting-rooms also used as bedrooms; in 72.2% of houses, beds for men and women were in the same rooms; 5.6% of the houses were incapable of ventilation; 77.7% were filthy; 66.6% were without water and only 77.7% houses with necessary offices. The administration of narcotic cordials to children was prevalent in all towns, but in some "Quietness" was preferred to "Godfreys"; many drug-gists described the harmful effect and even deaths which resulted from their use.

Ventilation

Though Dr. D. B. Reid, one of the Commissioners, in a report on Newcastle, Gateshead, North Shields, Sunderland, Durham, and Carlisle, repeats the now monotonous list of abuses, his account is of special interest because of his insistence on ventilation and his description of the methods of removing noxious substances from mines, factories and houses. After describing the wretched conditions of pit rows at Shincliffe, where "50 pitmen's houses were built in the year 1842, now containing nearly 300 people . . . there are no necessities, no cesspools, no conduits nor drains, but that the filth accumulates in the front of the houses." Dr. Reid goes on to ascribe the "pallid countenances and shrivelled aspect" of the miner to the effect of work in ill-ventilated mines. Colour diagrams attached to the report illustrate the collection of fire damp and the method of ventilating mines by a furnace near the upcast. These diagrams show coal being drawn up the shaft in a basket counterbalanced with a tub, and miners stripped to the waist are using Davy lamps. No method of supporting the roof is shown. The "Davy and Improved Clanny lamps" are illustrated in cross section. Dr. Reid passes to a description of the lack of drainage and inadequate water supply in Newcastle, Gateshead, and other towns, but allows these subjects only ten pages—a model of brevity compared with the reports of other commissioners and witnesses on the subject of sanitation—before he returns to the subject of ventilation. "The state of ventilation in any apartment depends essentially on three conditions, the quality of the external air, the quantity that can be made to flow throughout it in a given time, including its mode of distribution, and the regulation of which it is susceptible, whether we regard the temperature communicated to it or the force with which it impinges on the system—and its freedom from any noxious ingredient that may be developed by lamps, candles, fire-places, or any other special cause." He remarks that "little or no ventilation is in general observed in the dwellings of the different classes of society beyond those usually accessible by the medium of doors, windows and fire-places." Gas is regarded as harmful unless special provision is made for ventilation, and Dr. Reid rightly remarks: "Ventilation is universally observed to be most deficient where great destitution prevails, as a low diet renders the system less capable of bearing that amount of air which would otherwise be agreeable."

Forced ventilation for houses is suggested (by arranging a connection between the kitchen flue and each room). Dr. Reid so accurately describes the principle to be applied in the ventilation of factories, and so accurately forecasts modern practice, that his report is worth quoting at some length:—

"The ventilation of workshops and manufactories claims as much attention, and is fully as important to those who are engaged in them, as the ventilation of their dwellings. In the latter they may spend from a third to a half of their life in a vitiated atmosphere, and at all events that period of repose is often oppressive and unrefreshing from this cause. But in manufactories, more especially where the occupations are sedentary, where the vicissitudes of

temperature are extreme, where siliceous, metallic, or other particles are received into the lungs, and induce disease by mechanical irritation, or when acid and corrosive or other deleterious emanations produce still more rapidly dangerous consequences, the subject of ventilation demands a more earnest attention, and is important to the manufacturer who is deprived by early death of skilled and valuable workmen, independent of the severity with which such causes prey upon them and their families.

In all such cases the great point which the manufacturer should endeavour to attain, when practicable, is the direct removal of noxious emanations from the very source at which they are developed. General ventilation must be superadded to give complete relief, but if noxious emanations be once permitted to escape into the atmosphere of the apartment or workshop, the entire change of atmosphere is essential to restore freshness to the air; whereas if every noxious product be treated as much as possible on the same principle, as smoke, by providing arrangements for the direct exclusion of the products of combustions, a much less amount of ventilation is sufficient, and at the same time the ventilation becomes much more effectual."

Warming was essential to ventilation, especially where the occupations were sedentary; but "20 respirations per minute, 1,200 per hour, or 28,800 in a single day and night" gave the evils of bad ventilation an influence "which cannot be too minutely investigated." Natural means of ventilation—for example, fire or small holes—if properly arranged with due regard to the rise of hot and vitiated air, were thought by Dr. Reid to provide sufficient air change: too often, however, the arrangement of fires, doors, windows, holes, was wrong and ineffective. (Diagrams showing the method of ensuring natural ventilation are attached to the report.)

Tyneside

The question of nuisances was "of much greater practical importance in the northern districts . . . from the extent to which nuisances prevail." Slaughterhouses, black smoke from factories, steamboats on the Tyne, acrid fumes from manufacturing operations, muriatic acid, especially along the banks of the Tyne, where 20 to 30 tons were discharged daily into the atmosphere, were "all bad nuisances." Glue and Prussian blue factories and tanneries also discharged offensive fumes and odours. Fumes from a lead works were but casually mentioned: "There is one source of disease which I should like to see removed, that is the lead works. This is a source of great expense to the ratepayer, and of incalculable suffering to members of the poor, who become, in consequence of paralysis, permanently disabled, and are cut off. We see the poisonous effect of this agent in all its forms."

The familiar melancholy tale of defective sewers, filthy streets, overcrowding, and disease is told of Lancaster, Salisbury, Derby, Exeter, Bristol, Norwich, Portsmouth, and other towns.

Recommendations of Commissioners

In presenting their Second Report the Commissioners made 30 recommendations. In brief, they recommend that local administrative bodies be appointed and empowered, subject to approval of the Crown, to raise money, levy rates, and to appoint executive officers, for the planning, execution, and maintenance of sewers, drains, street paving and surfacing, for the collection and disposal of refuse, and for cleaning privies. The provision and maintenance of "a sufficient and proper distribution of water to all classes" by pipes, not only for domestic purposes but for draining and street sewers, and for fire fighting, should be an "imperative" duty of the local administrative body; collecting dung, smoke from furnaces, steam engines and steamboats should constitute nuisances. The local administrative body should establish workhouses and baths and create and maintain public walks.

The local administrative body, subject to proper control, was to be empowered to raise money for the widening of thoroughfares: the width of courts should be not less than 20 feet and in proportion to the height of the buildings; cellar dwellings prohibited "unless the rooms of certain dimensions are provided with a fire-place and a window, of sufficient size and made to open . . . have an open space in front; and the foundations be properly drained"; all new houses should have "proper necessities for the accommodation of the inmates." In public buildings adequate ventilation

should be secured: on complaint of the parish medical officer of "any house or premises" being "in an unwholesome condition," or that an "infectious disorder exists therein," the landlord should be compelled to cleanse it, or if the landlord failed to do so the local administrative body might act and recover the cost from the landlord. Magistrates should be required to regulate "lodging houses for the reception of vagrants, troupers and other such sufferers."

The 29th recommendation was in the following terms: "We therefore recommend that the local administrative body have power to appoint, subject to the approval of the Crown, a medical officer properly qualified to inspect and report periodically upon the sanitary condition of the town or district, to ascertain the true causes of disease and death, more especially of epidemics, increasing the rates of mortality, and the circumstances which originate and maintain such diseases, and injuriously affect the public health of such town or populous district."

Truly the Commissioners, in their own words, establish the foundations for an "improvement in the moral and social conditions of the proper inhabitants of large towns and populous districts." That the commissioners conceived their duties in a spirit of urgent solicitude for the unfortunate and with a deep anxiety to help is evident in every page of the report, but at no time—and let this be an example to the planners of to-day—did they countenance even for a moment any interference with the right of the individual, so long as he did not harm others, to live as he pleased. On the contrary, the independence of the individual was at all times to be sought. Many of their recommendations are to us an accepted and unconsidered but essential triviality of civic and individual life; but in 1844 who could have foreseen the great growth of public health services—hospitals, school medical services, housing estates, tuberculosis clinics and sanatoria, maternity and child welfare services—which were to be the branches of a tree so firmly planted in the foul streets and uncleansed courts of a century ago. But, perhaps because of the filth clogging its roots, the growth of this tree was slow. A Board of Health was not created until 1848 and, with Lord Carlisle, Lord Shaftesbury, Edwin Chadwick, and Dr. Southwood Smith as commissioners, it opened the way to rapid improvements. In 1854 the Board was merged (but never dissolved) with the Local Government Board, itself to be merged eventually in the Ministry of Health. And to-day, with the promise of a National Health Service, we no longer dream of preventing ill-health, of protecting the community from the individual, but of creating health and the conditions for healthy living. But in our search for health, let us not forget that the country is made up not only of healthy bodies and healthy minds, but of men, women, and children. Let us remember, as did the commissioners a hundred years ago, that to have health all must be united in a healthy freedom; and if we lose this freedom in the administrative machine grinding its way in an undeviating course along the road of health, we shall have achieved a sloth from which no one can rescue us, and in which the tree, so well planted but a hundred years ago, will wither and die.

The annual reports of the Friends' Ambulance Unit are always a pleasure to read. The report for 1945 has recently been received, and once more gives a picture of selfless and devoted work in various countries devastated by war. Work has been undertaken in areas as far apart as Normandy, Italy and Sicily, the Middle East, the Balkans, Ethiopia, India and China. "The efforts of the Unit," says the report, "have been directed towards the relief of suffering caused by war, and towards witness not only to the rightness, but also to the effectiveness of the pacifist way of life. . . . Members of the Unit realise that they have equally taken upon themselves the sin of allowing evil to go unopposed. . . . In spite of its many shortcomings and failures, the Unit believes that it has not been wholly unsuccessful in its efforts to relieve a portion of the sufferings caused by war."

Dr. A. H. G. Burton has recently completed 25 years' service as M.O.H. for Ilford. At a commemorative function, attended by the Mayor and those aldermen and councillors who had been closely associated with the work of the department during this period, the present and former members of his staff presented Dr. Burton with a gold fountain pen and cheque.

PENICILLIN*

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Work on the clinical applications of penicillin has developed much faster than our conceptions of the nature of its action, and there are vast gaps in our knowledge of the whys and wherefores of its behaviour. Since it differs in certain respects from all other antiseptics, it requires special attention from both bacteriologist and pharmacologist. The war has emphasised its clinical importance and accelerated its clinical development, but may have delayed its more thorough experimental investigation.

What is Penicillin?

Penicillin is the name given to an antibiotic substance formed in the culture medium in which the mould *Penicillium notatum* is grown. The yield is not entirely dependent upon the extent of the growth; certain strains ("1249-B21" for surface growth and "832" for submerged cultures) are advisable. Mutations in the mould are a common source of anxiety and disappointment. A great deal of work has been done towards the development of the ideal culture medium, but a discussion of the relative values of lactose and glucose, corn-steep liquor and yeast extracts, and of the place of zinc and the mechanism of its action would probably be unprofitable.

Penicillin is an unstable acid but forms freely soluble and reasonably stable Na and Ca salts, provided their pH is kept between 5 and 8. Early Ca salts were far from pure; they contained 12 to 100 "Oxford units" per mg. (O.U./mg.) and were regarded as too irritant to inject but suitable for local application. Recent samples made in America have assayed up to 800 O.U./mg. for the Ca salt and 1,650 O.U./mg. for the Na salts. Workers in Oxford and America claim to have isolated pure penicillin. Its formula may be $C_{24}H_{34}O_{11}N$ (Heilbron *et al.*). Distinguished chemists in both countries have so far been unable to synthesise it.

The O.U. was defined as the least amount which, when added to 50 mls of standard broth, just inhibits the growth of a test strain of *Staph. aureus*. An international unit has been established, and is at present the specific activity of 0.6 μ g. of the standard preparation. Were it possible to use pure penicillin, units might be replaced by mg., but a high degree of purification still involves considerable wastage of material and is not an economic proposition. There was a proposal that no penicillin with activity less than 300 O.U./mg. should be regarded as of U.S.P. quality, but such restriction would cut out many of our present British preparations.

Pharmacology

Penicillin is almost non-toxic. Its salts, as regards toxicity, have a range $K > Mg > Ca > Sr > NH_4 > Na$ —a range which also reflects the relative toxicities of the cations. Observed toxicity is, according to Welch, primarily due to cations.

Purified penicillin does not produce any irritant effects. It does not alter the O₂ consumption of yeast cells, duck erythrocytes, or rat-liver slices at a concentration of 3,400 O.U./mil.: 1/5,500 does not affect the responses of such plain muscles as the gut or uterus. A high concentration reduces the amplitude of the perfused frog heart, but this action is completely reversible (Van Dyke). The urease activity of tissues is inhibited by penicillin, and after penicillin treatment patients often show an elevated blood urea.

Absorption, Excretion and Distribution

Penicillin is destroyed by the acid of the gastric juice when given by mouth, except in achlorhydrics, in whom a reasonable blood level and 20–40% excretion in the urine may follow oral administration (only 3% is excreted in the urine of a normal subject after ingestion). Given per rectum penicillin is destroyed by the enzymes of *B. coli*.

Penicillin has been given by intravenous drip, but this tends to produce sclerosis in the vein if continued for 24 hours or longer;

* Paper read before the North-Western Branch of the Society on November 10th, 1944.

yet such drips have been maintained successfully for as long as nine days. Penicillin is rapidly absorbed from subcutaneous or intramuscular depots—perhaps too rapidly for ideal therapeutic conditions, as it is soon removed from the blood by the kidneys and is concentrated in the urine (58% if intravenous, is lost in three to four hours), while the liver excretes some into the bile. Many complaints have been recorded of severe pain following intramuscular injections of the less highly purified preparations, but such are becoming less common. The development at St. Bartholomew's of the intramuscular drip has been a definite advance in methods of administration. Pain is rare and the infusion relatively trouble-free. Experiments continue in which penicillin is incorporated in oil or gum before injection. It has been proposed to reduce the rate of excretion by giving the antidiuretic principle of the posterior pituitary. Another suggestion is to give p-aminohippuric acid—which is non-toxic and halves the renal excretion in dogs during the first two hours after intravenous penicillin (Beyer, Woodward *et al.*, *Science*, 1944, 100, 107).

Penicillin fails to penetrate the red blood corpuscles in significant amount. It reaches such tissues as the eye and the foetal circulation in small concentrations. It is slow in getting into the cerebrospinal fluid, and may have to be given by intrathecal or intraventricular injection in severe infections of the central nervous system. It is only slowly eliminated from the cerebrospinal fluid, so that one injection there per day is probably adequate. In the intensive treatment of syphilis, it is claimed that the drug reaches the cerebrospinal fluid quite satisfactorily.

Estimation

For estimation a "cup" method in which the zones of restraint are measured on a plate infected with *Staph. aureus* or *B. subtilis* is widely employed. Other workers prefer to use serial dilutions, or a turbidimetric method, with *Staph. aureus* in neutral broth (demonstrated).

Bacteriology

Florey (*Brit. Med. J.*, 1944, 2, 169) claims that the value of penicillin lies in the following four characteristics:—

1. Acts in great dilution as a bacteriostatic, one in fifty to one hundred millions.
2. Retains its activity in tissue fluids—serum, pus, autolysed tissues. (This gives it as great a lead on the sulphonamides, as acriflavine has on HgCl₂.)
3. Acts equally well in the presence of large numbers of organisms, inhibiting almost all. Mitchener puts this alliteratively but scarcely accurately: "penicillin works best in a puddle of pus."
4. Differs from other antibacterials in that it has no significant poisonous effects on animals, tissues, or even on such individual cells as white blood cells—these and tissue cultures are unaffected by concentrations many hundreds of times greater than those which stop the growth of sensitive organisms.

Hobby *et al.* claim that 0.03% penicillin inhibits the growth of two to four million haemolytic streptococci, the number of organisms decreasing at a constant rate till 99% are destroyed. There is no lysis of organisms—no detectable loss of penicillin from the solution (*Proc. Soc. exp. Biol. N.Y.*, 1942, 50, 277).

Bacteria sensitive to penicillin include staphylo-, strepto-, pneumo-, gono-, meningo-cocci, and spirochaetes. They are strongly inhibited, but at one time Florey doubted whether penicillin was ever bactericidal. Some bacteria previously regarded as insensitive to penicillin have been recently demonstrated to be susceptible to higher concentrations. Bigger (*Lancet*, 1944, 2, 497) believes that penicillin is bactericidal, but attacks only growing and multiplying organisms. He regards the small proportion of the organisms which survive penicillin as dormant persisters rather than resisters, and advocates the clinical use of larger doses at longer intervals. The abnormal continuation of growth in organisms exposed to low concentrations of penicillin suggests that cell-division is checked.

Garrod found some support for Bigger's views in a study

of the action of penicillin on staphylococci in diluted broth. On the other hand, the effects of temperature on the action of penicillin and the almost uniform susceptibility of organisms, whether from old or young cultures, are against the theory of an action limited to multiplying cells.

A more extraordinary conclusion reached in these experiments is that the bactericidal action of penicillin is not increased and may be diminished on increasing its concentration. With the use of a highly purified specimen the time required to kill 50% of an inoculum (L.T.₅₀) is unaffected by using 1, 10, 100 or 1,000 u./mil., and 10,000 u./mil. was less effective than these lower concentrations. With less pure preparations the L.T.₅₀ increases with increasing concentration of the contaminating impurities. Garrod concludes that penicillin is rapidly lethal to sensitive bacteria but that there is nothing to be gained by using high concentrations, particularly for local treatment. On the other hand there is much clinical evidence that the success of penicillin treatment depends on the maintenance of adequate concentrations in the tissues for a reasonable length of time. Thus Sorsby finds in ophthalmia neonatorum that the efficiency of penicillin eye drops increases markedly with increasing concentration; 500 u./mil. gave satisfactory results in only 3 of 8 cases, 2,500 u./mil. yielded good results in 21 of 22 patients.

Dosage should be adequate, as penicillin-resistant strains may otherwise be developed. Resistant strains of pneumococci and staphylococci have readily been obtained by repeated subculture, but some such staphylococci soon lose their resistance on further subculture. Claims for the value of the use of crude culture media (vivacillin, etc.) have not stood critical tests, but in the light of Garrod's conclusions dressings containing traces of penicillin may be not without value.

Clinical Applications

It is impossible to refer to the hundreds of papers which have already appeared on the clinical applications of penicillin. Fortunately they can be easily summarised. Where an infection by a penicillin-sensitive organism exists it can be more rapidly and more safely eliminated by penicillin than by any other known treatment. But penicillin does not abolish surgery from the treatment of such conditions as osteomyelitis with sequestra or lung abscess, probably because the circulation in the diseased focus would not bring penicillin in sufficient concentration against the organisms, nor is it reasonable to expect an antibiotic to eliminate dead tissues. In such diseases penicillin is a most valuable assistant to the surgeon but a disappointing substitute for surgery. The following publications provide readily accessible summaries and references.

I. "Investigation of War Wounds: Penicillin: a preliminary report to the War Office," by Florey and Cairns, London, 1943, covering chronic septic wounds, recent soft tissue wounds, recent fractures, gas gangrene, head wounds, sulpha-resistant gonorrhoea and burns. (This report is classified as "Confidential," but has been widely distributed.) Much similar information is available in the special issue of the *Brit. J. Surg.*: Special No., 1944, "Penicillin in Warfare."

II. See *Brit. Med. J.*, August 5th, 1944, 2, 169, for (a) A survey by Florey (the Peter le Neve Foster Lecture); (b) report on treatment of acute empyema—usually plus surgery; (c) use in ophthalmology—application of drops and ointments, which retain their potency for four and six hours.

III. See *Brit. Med. J.*, 1944, 1, 513 *et seq.*, for reports on therapeutic properties: (a) Organisation of a penicillin unit, being an account of the set-up at St. Bartholomew's Hospital; (b) systemic administration, recommending intramuscular drip (2 pints per day); (c) use in bone infections, not as a substitute for surgery; (d) soft-tissue lesions and abscesses, again as an aid to surgery; (e) skin diseases—a summary of 75 cases, with striking successes in blepharitis and sycosis.

SYPHILIS

The American work on syphilis was discussed at the Association of Physicians and at the June, 1944, meeting of the American Medical Association. Following the demonstration by Mahoney of the efficacy of penicillin in rabbit syphilis clinical trials were instituted in a number of centres. By April, 1944, Moore (Johns Hopkins) had records of 1,200 cases of early syphilis which had been treated with penicillin.

By the end of 1944, 10,000 cases will have had treatment, but it will clearly take some years for final evaluation. Various dosage schedules, with three-hour intervals between doses, have been followed; seven-and-a-half day courses were given (60 doses); four-day courses are now on trial.

Whether a patient received 1,000 or 20,000 units per dose, the spirochaete disappeared from the chancre in 12 to 16 hours, and the lesions healed rapidly. The serological reversal in six to eight weeks seemed to be similarly independent of the dose. Relapses so far are under 2% and have mostly been in patients who received less than 600,000 O.U. In some of the experiments mapharsen was combined with penicillin, but this did not affect the results and has been discontinued. In the course of these intensive treatments, evidence has accumulated that such intramuscular injections profoundly affect the cerebrospinal fluid. The workers are naturally interested in the development of better and more practical methods than three-hourly night and day intramuscular injections or the use of a drip, intravenous or intramuscular. Penicillin can be shown to be active when implanted as a suitable tablet, and is also being tried in oily suspensions, as Herrell has demonstrated the possibilities of this method in the experimental animal. Eight patients with early syphilis who were "chemo-resistant as regards arsenicals," "recovered promptly" on administration of penicillin, and ten infants with congenital syphilis were apparently successfully treated with 20,000 units/kg.

In 200 patients watched by Jeffrey and Scott Thomson, one developed an urticarial reaction. Contact dermatitis from penicillin has also been described. In the intensive therapy of syphilis with penicillin febrile and Herxheimer reactions are reported in 40 to 50% of patients treated. In 700 such patients two experienced mild exfoliative dermatitis and one angio-neurotic oedema.

Late syphilis appears to respond as dramatically as early. Gummatous lesions heal at least as quickly on treatment with penicillin as with other drugs. Of 14 paretics treated at Baltimore, up to April, 1944, the symptoms of 13 were improved. Prompt results were noted in improved cell count and protein in the cerebrospinal fluid, and in slower changes in complement fixation and the colloidal curve. In late syphilis there is apparently no serological improvement.

In March, 1944, the Penicillin Committee of the N.R.C.* allotted 500 million units per month for studies on the treatment of syphilis, and it was expected that penicillin would shortly be used for all Services cases in combat zones, in doses of 1,200,000 units spread over eight or four days. To the pharmacologist, it looks as though penicillin is as far ahead of the arsenicals as the arsenicals are ahead of mercury.

GONORRHOEA

Gonorrhoea in the male, if sulpha-resistant, is treated by giving five injections at hourly intervals of 10,000 to 20,000 O.U. This cures 98% of cases. Local effect during excretion is not, however, responsible for this result, for if it is instilled and the meatus sealed the drug fails miserably. There are no reported relapses after penicillin, though some of these patients had had sulpha-treatment up to 150 days. In women, five hourly injections of 20,000 O.U. are given, and 5 to 10% need a second such course. Penicillin is also brilliantly successful in ophthalmia neonatorum. At Johns Hopkins non-specific urethritis is normally treated like gonococcal infection. Penicillin has not been fully investigated in this condition. Its value in gonorrhoea is accepted as unparalleled.

SUBACUTE BACTERIAL ENDOCARDITIS

This disease provides one of the most debated fields for penicillin therapy, partly perhaps because of the long courses and high doses which have seemed desirable. Over 200 patients have had treatment, and some have had many million units. Some were probably moribund before penicillin therapy was initiated. A few apparent recoveries have been recorded, and also much symptomatic improvement. As with syphilis, we must wait and see.

The American Council of Pharmacy and Chemistry published (*J. Amer. Med. Ass.*, of July 8th, 1944, page 707) a

* National Research Council, U.S.A.

list of the successes and failures of penicillin. Among the important failures are tuberculosis, malaria, rheumatic fever, ulcerative colitis, acute leukaemia, and Hodgkin's disease. Penicillin is no panacea. But it has achieved outstanding results, and its discovery may well lead to many more therapeutic developments; its prophylactic possibilities are only beginning to be considered.

FOOTNOTE

Since this lecture was given (November 10th, 1944) several reports on the place of penicillin in the treatment of syphilis have become available, notably: *J. Amer. Med. Ass.*, 1944, 126, 63, 67, 73. (Early and Late Syphilis); *Ibid.*, 1944, 126, 408 (Congenital prevention and treatment); *Brit. Med. J.*, 1944, 2, 821 (leading article); *Brit. J. Vener. Dis.*, 1944, 20, 133 (Sir A. Fleming).

BOOK REVIEWS

Studies on Immunisation. Second Series: Vol. IV. By Sir ALMROTH E. WRIGHT, M.D., F.R.S. 1944. London: Wm. Heinemann Medical Books. Pp. 256. Price 25s.

This further collection of published papers and excerpts from books by Sir Almroth Wright and some of his colleagues has considerable historical interest. It is the apologia of the "immunisator," as Sir Almroth would call the physician or bacteriologist who practises vaccine therapy and prophylaxis. The pros and cons of vaccine therapy are well argued in the first chapter, and the argument is elaborated in a later paper, while the principles of immunity as the author sees them are given in a general review of the subject reprinted from the *Encyclopaedia Britannica*. There is a good account of Wright's pioneer work on the prophylaxis by vaccine of pneumonia among the natives in the South African mines, and this leads on to later discussion on specific and non-specific immunity. His latest paper, on "The need for abandoning much in immunology that has been regarded as assured," is also reprinted. Methods of measuring opsonins, bactericidal activity of the blood, action of antiseptics, etc., by the techniques devised in the Inoculation Department of St. Mary's Hospital are described and suitably illustrated. Like its predecessors, this volume is beautifully printed and produced.

Old Age in the New World. By EMILY D. SAMSON. 1944. London: The Pilot Press, Ltd. Pp. 60. Price 4s. 6d.

Old Age: Some Practical Points in Geriatrics. By TREVOR H. HOWELL. 1944. London: H. K. Lewis. Pp. vi + 50. Price 4s. 6d.

Hostels for Old People. The Friends Book Centre. Pp. 30. Price 1s. 6d.

In China, the old are respected and revered. In this country we do our best to conceal the signs of time, and are apt to relegate old people to institutions. But as statisticians tell us that in a short time we shall become a nation in wheel chairs, it is perhaps important that we should revise our attitude to the aged. Recently, there have been a number of publications on the care of old people. *Old Age in the New World*, in the "Target for To-morrow" series, is attractively presented and illustrated, and shows much concern for the happiness as well as for the material comfort of the ageing. It is stressed that companionship, personal possessions, "a cup of tea by one's own fireside," green lawns and gay flower beds, can all do much to brighten the last years of life.

Old Age, by Trevor Howell, is designed less for the general reader, and more for nurses. The first chapters discuss the clinical examination of old people and give general hints on how to deal with the sick and dying. Then follow observations on blood pressure, rheumatic diseases and physiotherapy, bronchitis, cardio-vascular diseases, ischaemia and cancer. There is a short list of references.

The Friends Relief Service have published a 30-page pamphlet, *Hostels for Old People*, giving practical suggestions for location, furnishing and equipment, staffing, organisation, finance, etc., which should be of great help to those planning hostels for the elderly.

The Council of Seven Beliefs is a body of serious-minded men and women who believe that the preservation of our race is important for the welfare of mankind. Consequently it views with dismay the tendency towards an ageing and diminishing population, and is desirous of investigating the causes and finding remedies for this tendency. The Council believes that one of the most important factors is a lowering of the noble calling of motherhood. In the present state of our civilisation not all women can become mothers, and those whose biological and social conditions do not preclude it, receive scanty encouragement. Small families, the necessity to earn a living, or the desire to achieve an individual career, prevent many girls from learning the domestic arts which are fundamental for the success of family life. Many young married couples are unwilling to face the responsibility of parenthood, either from purely selfish motives or for fear of being overwhelmed by social or economic disaster through no fault of their own. Those who want children and have faith in the future may well be daunted by the obstacles which modern housing conditions and the lack of domestic help place in the way of rearing a family, so that the mother of six is now more often regarded by her sisters as an object of pity rather than of envy. In spite of all this a woman's primary urge is still to become a wife and mother, equal partner with her husband in the joys and trials of family life. There are signs that at this late hour the nation is beginning to realise that its continued existence depends on the production of conditions in which family life can flourish and the dignity of motherhood be maintained. The Council of Seven Beliefs is striving to stress the urgency of the matter by publishing Dr. Grantly Dick Read's address on "The Importance of Motherhood in the Post-War World." This pamphlet will be useful to all those who hold the same views and seek help in expressing them. It may be obtained from the Headquarters of the Council, 34, Sussex Place, London, W.2, price 6d. net, postage 1d.

OBITUARY

F. A. SHARPE, M.D., D.P.H.

Members of the Public Health Service and many in other walks of life will have heard with deep regret of the sudden death of Dr. F. A. Sharpe at his home near Preston on February 21st, at the age of 63.

A native of Leicestershire, Frederick Augustus Sharpe had a successful career at Guy's, from where he qualified M.B., B.S. in 1905. He took the D.P.H. of Leeds in 1907, and the M.D. of London (State Medicine) in 1910. Like many others who have distinguished themselves in health administration he served his early apprenticeship with Brindley, of Derby; and, after appointments as M.O.H. of Chesterfield and of Barnsley, he came to Preston a quarter of a century ago. Here his efficiency and charming personality won him the respect and affection not only of his Council, brother officials, and staff of the department which he so ably controlled, but also of the general public. Sharpe was a man of high gifts; he was cultured, widely read, adaptable and, above all, endowed with an inherent sense of fairness and kindness. He possessed a keen sense of humour and a ready tongue, which was a source of constant joy to his intimate friends. Members of the Society of Medical Officers of Health will long remember his mastery of debate, his gift of summing up involved discussions, and his own inimitable way of disarming criticism or of reconciling conflicting points of view. Such ability made him a most acceptable President of the North-Western Branch of the Society and a valued member of the Council of the parent body. His later years were clouded by the death in action of a much-loved son, a Captain in an Airborne Unit of the R.A.M.C. Deep though his friends knew his sorrow to be, it was typical that he carried on with his customary cheerfulness and energy, to die as he would have wished, in harness. Sharpe leaves behind him nothing but a host of happy memories which will ever live in the minds of those who, like the writer, were privileged to enjoy his refreshing friendship. He is survived and mourned by a widow, son and daughter. His funeral service was attended by civic chiefs and officials of the town which he had served so faithfully, by many of his general practitioner and public health colleagues, and by his masonic brethren.

The Ministry of Supply announces that, on taking up another government appointment, Mr. J. B. Hutchings has resigned his post as Principal Director of Salvage and Recovery.

SOCIETY OF MEDICAL OFFICERS OF HEALTH YORKSHIRE BRANCH

President: Dr. J. A. Fraser (C.M.O., North Riding).

Hon. Secretary: Dr. J. M. Gibson (M.O.H., Huddersfield).

An ordinary meeting of the Yorkshire Branch was held in Leeds on December 29th, 1944, at which 20 members were present. This was preceded by a meeting of the Council, at which seven members were present.

At the ordinary meeting, Dr. J. J. Jervis reported that the Hon. Secretary, Dr. J. M. Gibson, had been appointed Chairman of the General Purposes Committee of the Council of the Society. It was resolved that a record be made in the minutes, expressing the satisfaction of the members of the Branch with this appointment, which, as the President stated, they regarded as a tribute to Dr. Gibson's services, not only as Secretary of the Yorkshire Branch, but also on the Council of the Society.

The minutes of the meeting held on December 1st, 1944, were approved.

The President welcomed two new members, Dr. M. E. Willcock, School M.O.H., Leeds, and Mr. K. G. Penney, School Dentist, Sheffield. Information was received that Major E. H. Tomlin, R.A.M.C., and Mr. K. G. Penney, L.D.S., had been accepted as members of the Society, and would be attached to the Yorkshire Branch.

A discussion followed upon the suggested scale of salaries for medical officers in the Public Health Service, and the following recommendations were agreed upon:

(1) That medical officers of mental deficiency institutions should be either included in Group IV of the Scale, or specially mentioned as included with the Mental Hospitals Group.

(2) That where a medical officer is superintendent of one hospital and medical officer of another institution, consideration should be given to the total number of patients or beds under the medical officer's care.

(3) That officers who have served a local authority for a considerable number of years should be granted a greater allowance than 1/120th for each year of non-contributory service.

(4) That for purposes of superannuation war service should be regarded as equivalent to service with a local authority, and be counted, therefore, either as contributory or non-contributory service according to circumstances.

(5) That all medical officers already employed should be placed in the appropriate position on the Scale corresponding to their previous service. (This would appear to be in lieu of VII(3).)

(6) That there should be some safeguard to protect medical officers of health of county districts in the event of these districts ceasing to be autonomous health authorities.

(7) That as the scales outlined are those we hope to secure, it might be advisable to submit somewhat higher scales in the first instance to allow for "bargaining."

Prof. J. W. McLeod read a paper on the "Vi" phage typing of *B. typhosus*.

A brief summary was made of the original work of Craigie and Yen on Vi phage typing of the typhoid bacillus. Felix's work with Pitt on distinguishing the Vi antigenic components of the typhoid bacillus was also reviewed, and his later work with Miss Callow on the application of Craigie and Yen's methods to a similar typing of the Para B. bacillus. The value of these methods in following out the aetiological chain in cases of infection with bacilli of the enteric group was also discussed and illustrated from the papers of King and Bradley.

An ordinary meeting of the Yorkshire Branch was held in Leeds on January 26th. Twenty members were present. This was preceded by a meeting of the Council, at which nine members were present.

At the ordinary meeting the minutes of the last meeting, held on December 29th, 1944, were approved.

The meeting which followed was regarded as an "open day." Dr. J. J. Buchan wondered what progress had been made in regard to the provision of home helps in cases of sickness or infirmity, as sanctioned recently by the Ministry of Health. Members disclosed that although schemes had been approved in most areas, no home helps had so far been available. Dr. E. D. Irvine, of Shipley, reported that in response to an advertisement he had received applications from persons with Civil Nursing Reserve training, who seemed to regard the service as one of nursing.

Dr. J. M. Gibson suggested that when communications were received from non-members of the Society of Medical Officers of Health the opportunity should be taken to point out the advantages of membership.

Dr. J. J. Buchan referred to the present prevalence of infantile diarrhoea in several institutions in the West and East Ridings of Yorkshire. This was regarded as an infectious type of dysentery,

but no pathogenic organisms had been isolated. There had been a few deaths among babies.

Dr. D. D. Payne asked what action should be taken on receipt of a notification of Sonne dysentery. It was generally agreed that inquiry should be made regarding the source of infection, and that disinfection of personal clothing should be carried out; but unless the handling of food were involved, extensive bacteriological examinations seemed unnecessary.

Dr. Payne asked if it was considered safe for patients suffering from pulmonary tuberculosis to borrow books from a public library. It was agreed that this practice should be condemned, and that patients in a sanatorium should have a library at the sanatorium for their own use. Dr. Payne also asked if all crockery at a sanatorium should be boiled. It was agreed by the members that this was advisable, unless all patients were provided with individual utensils.

Dr. Gibson referred to difficulties in dealing with the illegitimate children of coloured soldiers. At present the only redress is by means of a paternity order through the court, but the circumstances are usually such that procedure of this kind is impossible.

Dr. Irvine said that paediatricians could be appointed by a local authority to advise upon the treatment of children seen either at clinics or at hospitals, but apparently the Ministry could not sanction an arrangement which included home visits. He felt that permission for this service should be sought. He also called attention to the difficulty he had experienced in trying to control an outbreak of pemphigus neonatorum. This difficulty was shared by others present, and the futility of trying to check such an outbreak by the swabbing of contacts was emphasised.

It was resolved that the Council of the Society be asked for a legal opinion upon the position of a medical officer or of a nurse who contracts an illness attributable to employment, and suffers permanent disability therefrom. Further, that if compensation in such circumstances is either arbitrary, or dependent upon a verdict obtained through the Law Courts, an effort should be made to secure some measure of protection, similar to that granted to members of the Police Force under the Police Regulations.

It was resolved that the Council of the Society be requested to call the attention of the Ministry of Health to that fact that (a) large sections of the nursing profession are not adequately represented upon the General Nursing Council, and (b) the refusal of the General Nursing Council to recognise the Tuberculosis Certificate as a qualification for inclusion on the Register is a handicap to the efficiency of the tuberculosis service.

MATERNITY AND CHILD WELFARE GROUP

A Clinical Course, attended by 51 members of the Maternity and Child Welfare Group, was held at the Central Middlesex County Hospital on October 28th.

Diabetics and Pregnancy

Dr. Avery Jones then gave an address on diabetes and pregnancy. American work, he said, suggested that diabetes was inherited as a Mendelian recessive. If one parent was diabetic and the other not, the children had no greater tendency to diabetes than normal, but if the second parent had diabetic relatives, there was a 10% risk of diabetes developing before the age of 50. If both parents were diabetics, in time probably all the children would become so. The disease was not itself transmitted, but only a tendency towards it; studies in identical twins had shown wide variations in the age of onset; environmental factors might pull the trigger. Development of obesity was an important factor. Dr. Jones said that modern diets enabled the patient to lead normal lives. It was essential to teach the diabetic all about his illness, for it was only with his full co-operation and understanding that the best results could be achieved.

Dr. Mary Bigby said that in the days before insulin, pregnancy occurring in a diabetic patient resulted in a maternal mortality of 27% during pregnancy, labour and the puerperium, and a further 23% in the next two years, and a foetal mortality of 41%. Since insulin had been used the maternal mortality had been reduced to 2% and the foetal to 37%. At Central Middlesex County Hospital a series of eleven cases had been collected in the past two years; there was a foetal mortality of 18% with no maternal deaths. The diabetic risks were ketosis, hypoglycaemia, particularly in labour and the early puerperium, and sepsis from vulvitis. The chief obstetric risk in pregnancy was the increased frequency of toxæmia, noted particularly by American writers, Priscilla White (1942) finding it in 42%. Lawrence and Oakley found toxæmia in only 10% of cases, and at the Central Middlesex there was only one case with true toxæmia and one with hypertension throughout pregnancy. The foetal risks were: (1) large babies, up to 12 lb. or more; (2) premature death of the foetus *in utero*; (3) hydramnios with attendant risks of malpresentation, etc.; (4)

neo-natal death, possibly due to over development of pancreas *in utero* causing hypoglycaemia; (5) foetal abnormalities.

Dr. Bigby described the management of diabetics as follows. The carbohydrate allowance should be increased to 250 to 300 grammes by the fourth to fifth month to allow for the loss of sugar in the urine due to lowered renal threshold, and the calorie value be increased to 2,000 to 2,500. The insulin requirements might increase in the second trimester and even more in third trimester. They should be judged by blood sugar and not urinary sugar. The usual diet was given as long as possible, then glucose 20 to 30 grammes two-hourly, and in every case 30 grammes at the onset of the second stage. If ketosis were present even more might be required. The insulin requirements were usually considerably decreased in labour, and even more so in the puerperium. Careful supervision throughout pregnancy was essential, particular watch being kept for toxæmia; blood pressure and urine were tested fortnightly until the 32nd week, and then weekly. Premature delivery at 36 to 38 weeks was advisable to prevent over-large infants and foetal death *in utero* near term. The methods available were Caesarean section and surgical induction of labour. Nine live babies had been delivered at the Central Middlesex, eight following surgical induction at 36 to 37 weeks pregnancy, and one spontaneous labour at 32 weeks in the toxæmic patient; the latter's baby weighed 5 lb. 4 oz., and the others 5 lb. 6 oz. to 8 lb. 4 oz. There were no neo-natal deaths. One patient had foetal death *in utero* at 33 weeks pregnancy and one miscarried at 22 weeks.

In managing the baby, to prevent hypoglycaemia, glucose, 1 drachm in 1 oz. water, was given two-hourly for 24 hours, and then three-hourly and extra fluids; and breast feeding was started as soon as possible. Lactation, however, tended to be very poor.

Pyloric Stenosis

Dr. J. Sakula reviewed the last ten years' experience at the Central Middlesex County Hospital of cases of congenital pyloric stenosis. Forty cases had all been treated surgically. The earliest onset was at one week, the latest at six weeks, the average being three weeks. Vomiting was always the first symptom, and 39 out of 40 patients had projectile vomiting. Feeding was frequently changed; on admission only 25 of the 40 infants were still being breast fed. Over 50% were below birth weight when admitted; in three the loss in weight was more than 2 lb. Constipation was present in 80% of cases. On examination the child was wasted, but active and hungry. Visible peristalsis was seen in all cases, but the tumour was felt in only seven of the 40. Diagnosis was relatively simple and should be made on purely clinical grounds without x-ray examination.

The operation, for which the child had to be in good condition, was a modification of the original Ramstedt. Most of the children did well, and the average stay in hospital was 17 days. The average gain in weight during this time was 12 oz. There were four deaths—three from gastro-enteritis and one doubtful, a rate of 10%.

Mr. T. G. I. James also read a paper on this subject, in which he amplified some of the theories of pathogenesis and then reviewed the history of the operation.

Penicillin for Breast Abscess

Lady Florey, in a paper on penicillin in breast abscess, said that from November, 1943, to May, 1944—the six months of the year when sepsis was more prevalent—33 cases of breast abscess were treated at the Central Middlesex Hospital, 17 of which received penicillin by various techniques, the other 16 being treated by current methods. The average healing time in the cases given penicillin was 14 days—varying from 7 to 30; in the others, in which the treatment was sulphathiazole or sulphamezathine 20 to 30 grammes, stilboestrol, and eventual incision and drainage, it averaged 33 days, with a variation of 14 to 61. The penicillin-treated cases, when in the acutely spreading stage, were found to respond best to a 24- to 72-hour course of three-hourly intramuscular injections of 15,000 units. This was followed by aspiration, or expression through a sinus, and instillation of penicillin solution (500 units per c.c.m.) for some days till the pus was sterile. Only in one very large and well localised abscess was incision indicated; and in this evacuation followed by suture and intubation for continued local treatment gave a satisfactory result. One added advantage in the penicillin-treated series was that the mothers were able to suckle their babies on both breasts at the end of the treatment, which was found to be effective without stilboestrol.

Caesarean Section

Mr. J. MacVine said that over a period of ten years 143 Caesarean sections had been performed at the Central Middlesex Hospital, 50% during the last three years. The main indications for it were: (1) disproportion; (2) primary uterine inertia with rigid

cervix and prolonged labour; (3) placenta praevia. At the Central Middlesex Hospital labour was not induced for disproportion. In preference to induction it was advisable to let the patient go to term, and have a trial labour, being prepared then to perform a lower uterine segment Caesarean operation if necessary; in a remarkable number of these cases there was normal delivery at term. Primary uterine inertia was usually associated with a mild degree of contracted pelvis. There was generally premature rupture of the membranes, and labour dragged on for days with slow dilatation. The percentage of stillbirths and the maternal mortality were high. The problem in such cases was whether to have a long and protracted labour or deliver by Caesarean section. The number of Caesarean sections performed for placenta praevia had not increased during the past four years. In hospital it was the best treatment because by its means haemorrhage could be controlled. In cases of ante-partum haemorrhage where examination under a general anaesthetic was necessary, the preparations should provide for Caesarean section. Once the diagnosis of placenta praevia was made, operation should be performed without delay as delay might endanger the life of the patient.

Among the other though less common indications for Caesarean section were heart disease and pregnancy, and special cases of breech presentation with extended legs. In only six cases during the past ten years was the operation performed on patients with heart disease; in each it was associated with sterilisation. Breech presentation with extended legs might be difficult at any time, but when it occurred in an elderly primipara Caesarean operation was indicated. The risks of Caesarean section had undoubtedly been reduced by the use of the sulpha drugs, which were given in adequate doses immediately after the operation, and by stored blood now readily accessible in the operating theatre. The more remote risks included the rupture of a scar during a subsequent pregnancy; rare though this was, it occurred more often in the scar of the classical operation than in the L.U.S. scar. Foetal mortality was usually low—three cases out of 143, representing 2.1% as against 3 to 5% stillbirths for normal deliveries. Neonatal mortality was rather higher—4%.

DENTAL OFFICERS' GROUP

President: Capt. Quentin A. Davies, A.D.C. (D.O., Glamorgan C.C.).

Hon. Secretary: A. Gordon Taylor (D.O., L.C.C. Hospitals and Institutions).

A meeting of the Council of the Dental Officers' Group was held in London on January 27th. In the absence of the President Mr. R. Chase occupied the chair. Nine other members were present. The minutes of the previous meeting were read and confirmed. Amongst subjects discussed were dental salaries in the Askwith Scale, inclusion of dental instruction in the syllabus of training of health visitors, and conditions of service of dental officers coming under new controlling local authorities on April 1st, 1945, in accordance with the Education Act, 1944.

The Annual General Meeting of the Dental Officers' Group was held in London on January 27th. The chair was again taken by Mr. R. Chase, who was supported by a representative gathering of members.

The minutes of the previous Annual General Meeting, which was held on May 29th, 1943, were read and confirmed. A letter from the Secretary of the Central Council for Health Education was read, stating that a higher rate of remuneration and expenses had been approved for lecturers and asking that a rota of dental surgeons who would be willing to give lectures on dental subjects at public meetings should be sent to him. All members who wish to be placed on this list should send their names without delay to the Hon. Secretary, Mr. A. G. Taylor, 51, North End House, Fitz-James Avenue, Hammersmith, London, W.14.

Mr. C. R. Wilshaw read the report of the Council, which showed that a vast amount of work had been accomplished since the last Annual General Meeting, covering such matters as the evidence to be put by the Society before the Inter-Departmental Committee on Dentistry, the revision of salaries, dental propaganda films, the inclusion of dental subjects in the syllabus of training for health visitors, and many other matters.

The editorial report was presented by Mr. Fletcher, who regretted the paucity of dental material that had appeared in PUBLIC HEALTH; this was due in part to the shortage of space. Moreover, only business meetings of the Group had been held during the past year, and therefore no papers had been submitted for publication, the accepted principle being that dental matter submitted should if possible be of interest not only to dental officers but to medical colleagues. After discussion it was agreed that the editor of transactions should be given wider discretion in the initiation of dental comment for publication, and that, contrary to previous practice, reports of Council meetings should be submitted for publication under Branch and Section Reports.

The meeting then proceeded to elect the following officers for the coming year: *President*, Capt. Quentin A. Davies; *President-Elect*, Mr. A. Gordon Taylor; *Vice-Presidents*, Mr. George Thomson, Mr. R. Chase, Mr. J. Rhys-Herbert; *Hon. Secretary*, Mr. A. Gordon Taylor; *Hon. Asst. Secretary*, Mr. C. R. Wilshaw; *Hon. Treasurer*, Mr. S. K. Donaldson; *Hon. Editor of Transactions*, Mr. J. Fletcher; *Members of the Council*, Mr. K. C. B. Webster, Miss W. M. Hunt, Mr. W. A. Lilley, Mr. G. M. Davie; *Representative of the Group on the Council of the Society*, Mr. A. Gordon Taylor.

The Chairman then proposed a vote of thanks to Messrs. A. G. Taylor and C. R. Wilshaw for their services in their respective capacities as Hon. Secretary and Hon. Assistant Secretary. The motion was carried with acclamation.

NORTHERN BRANCH

President: Dr. J. B. Tilley (C.M.O., Northumberland).
Hon. Secretary: Dr. George Hurrell (Tuberculosis Officer, Newcastle-upon-Tyne).

A meeting of the Branch was held in Newcastle-upon-Tyne on January 6th.

The President and 28 members were present. The minutes of the meeting held on December 2nd, 1944, were read, confirmed, and signed by the Chairman.

The Chairman referred to the great loss that the Branch had sustained by the death of Dr. G. A. Dawson, of Darlington. Dr. Dawson had been an active member of the Northern Branch and was President during the session 1934-35. The members stood in silence as a mark of respect to his memory.

The Hon. Secretary read a letter from the North of England Branch of the B.M.A. which said that Dr. F. W. Grant, of Jarrow, had been appointed as their second representative on the Northern Branch.

The meeting discussed the recommendations of the Salaries Committee as to the Revision of the Askwith Scale and further suggestions were approved for submission to the Committee.

Dr. W. H. Dickinson, Medical Director, Mass Radiography Unit, Newcastle General Hospital, delivered an address on mass radiography. A general discussion followed, during which Dr. Hurrell gave particulars of those persons who had been referred from the unit to the Tuberculosis Dispensary. Dr. Dickinson was accorded a hearty vote of thanks for his address.

A meeting of the Branch was held on Saturday, January 27th, 1945.

There were present the President and nine members. The minutes of the meeting held on January 6th, 1945, were read, confirmed, and signed by the Chairman.

Dr. Grant conducted the members round the new Queen Elizabeth Hospital, Sheriff Hill, and after the inspection were entertained to tea at the kind invitation of the Gateshead Health Committee. The President, in moving a vote of thanks to Dr. Grant for arranging the visit, congratulated him and the Gateshead Corporation on their splendid new hospital.

COUNTY COUNCIL OF ESSEX AND URBAN DISTRICT COUNCIL OF THURROCK

Applications are invited from duly qualified medical practitioners, possessing the Diploma in Public Health, for the appointment of two temporary Assistant County Medical Officers and Assistant Medical Officers of Health. The salary attaching to the appointments will be at the rate of £500 a year, together with war bonus, rising, subject to satisfactory service, by annual increments of £25 to £700 a year, but the commencing salary may be varied having regard to experience and capabilities. Forms of application may be obtained from the Clerk of the County Council, to whom they should be returned completed, accompanied by copies of three recent testimonials, immediately. Canvassing, whether directly or indirectly, is forbidden.

JOHN E. LIGHTBURN,
Clerk of the County Council.
A. E. POOLE,
Clerk to the Urban District
Council of Thurrock.

County Hall, Chelmsford.
January 26th, 1945.

Subscription 31s. 6d. per annum, post free, in advance.
Single copies 2s. 6d. post free.

"Public Health" is the Official Organ of the Society of Medical Officers of Health and a suitable medium for the advertisement of official appointments vacant in the health service. Space is also available for a certain number of approved commercial advertisements. Application should be made to the Executive Secretary of the Society, at Tavistock House South, Tavistock Square, W.C.1. Telephone: Euston 3923. Telegrams: Epidawros, Westcent.

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EDITORIAL

Sickness in Women Workers

The Industrial Health Research Board has recently published a study of certified sickness absence among women in industry.* This is based on the records of 2,545 married women and 1,997 single women employed in five munition factories during the last six months of 1942. Compared with single women, the married women had 48% more absences and lost 65% more time. The number of days of certified sickness lost per worker during this period was 7.8% of the total number of days in the period. Diseases of the respiratory system—mainly colds and influenza—constituted the most important cause of absence. The other important causes were digestive troubles, nervous disorders and debility, and "fatigue." The latter complaints were responsible for a larger proportion of sickness than in peace-time. For both married and single women the average number of absences fell with increased age and length of service. The average number of days of sickness lost, on the other hand, diminished with age among married women, but rose for single women. In both groups the number of days lost, and also the average duration of sickness, tended to rise with greater length of service. In three groups divided according to occupation—clerical, examining, and production—the average number of days of sickness per worker were 14.9, 14.4, and 5.5 respectively. That there was probably much variation within each group is suggested by the analysis of absence rates in the production departments of one factory, where the average days of sickness varied from 6.3 to 19.0 in the various sections. There is an indication that sickness rates varied in different shifts, the women on permanent day-shift having a lower rate than those on either the two- or three-shift system.

Some reservations must be made if the results of this investigation are taken to reflect the real sickness rates of women munition workers, even in the five factories from which the records were drawn. In the first place, in the two years dealt with in the Report—i.e., 1942 and 1943—the last six months had a heavier incidence of sickness than the first six months of the year; this probably reflects a normal annual tendency. The method adopted in this survey was to select at random 1,000 women from each factory: thus, the chance of any woman being drawn varied in the five factories from 1 in 3.5 to 1 in 9.2, the largest factory being inadequately represented. All women entering or leaving the factories during the six months (5,462) were excluded, so that the number from whom the

sample could be drawn was reduced by one-third. The authors try to explain the general nature of the group discharged for reasons of health, and speculate on the possible effect that the omission of this group may have on the average sickness rates. However, they overlook the fact that for every two workers discharged because of ill-health there were eleven others leaving the factories for other reasons. An investigation of this kind is best planned before record-keeping starts, so that the information necessary to answer specific questions is readily available. Existing records often do not permit of satisfactory analysis. It is possibly for this reason that in the present report the type and conditions of work have been inadequately dealt with.

Mass Radiography

A report* recently issued by the Medical Research Council describes the administration and technique which were found to be satisfactory after carrying out an investigation on 23,042 people, who were drawn partly from factories, partly from civil service office staffs, and partly from mental hospitals. The results have been ably and critically analysed, and thus differ from certain similar investigations carried out elsewhere, when the only object seemed to be the collection of figures. In particular, it seems much better to classify the cases under "treatment" and "observation," than under "active" and "inactive," since the latter includes everything from a calcified Ghon's focus to old arrested fibrous lesions. It is those cases which need to have something done for them which are of practical interest, and it is on these that Hart and his colleagues give information. The results are of importance, and are therefore quoted in full.

INCIDENCE OF NEWLY DISCOVERED SIGNIFICANT TUBERCULOUS LUNG LESIONS

	Males			Females			Persons		
	Factory A	Factory B	Office group	Factory A	Factory B	Office group	Factory A	Factory B	Office group
All ages									
Number examined	1,408	3,439	3,810	3,314	2,218	7,093	4,720	5,657	10,903
Total cases (%)	1.6	1.2	1.6	1.3	1.4	1.1	1.4	1.3	1.3
Treatment cases alone (%)	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.4
Ages 14-34									
Number examined	702	1,450	545	2,269	1,618	5,211	2,971	3,068	6,756
Total cases (%)	1.4	0.8	1.3	1.6	1.7	1.1	1.6	1.2	1.1
Treatment cases alone (%)	0.3	0.2	0.4	0.4	0.6	0.4	0.4	0.4	0.4

* A Study of Certified Sickness Absence among Women in Industry. By S. Wyatt. M.R.C. Industr. Hlth. Res. Bd. No. 86. 1945. London: H.M.S.O., pp. 34. Price 9d. net.

* Mass Miniature Radiography of Civilians. By K. C. Clarke, P. D. Hart, P. Kerley, and B. C. Thompson, Spec. Rep. M.R.C. No. 251. H.M.S.O. 3s.

When the differences between males and females shown in this table are examined by the Chi-squared test, both the excess of total cases among males over females at all ages shown in the Office Group, and the excess of total cases among females over males at ages 14-34 shown in Factory B, are found to be probably significant: all other differences are insignificant.

There are two important problems connected with mass miniature radiography in factories which need careful consideration. One is the provision of beds for the treatment of those that require it, and the other is the problem of informing the industrial medical officer of the result of the enquiry. It has long been the statutory obligation of local authorities to provide treatment for pulmonary tuberculosis, and it has long been known that these authorities have not always provided the necessary facilities. Some of those that have provided beds have not seen that they are staffed with doctors skilled in treatment. The treatment of the tuberculous in the factory is a matter in which the industrial medical officer must play his full part. It is his duty to see that the workers in his office or factory are not exposed to infection, and also to see that any who may have the disease are not given jobs so arduous, or asked to work hours so long that their resistance is lowered with resultant spread or reactivation of the disease. Hart and his colleagues have fully realised the importance of this, and they show the part the doctor can play when they observe: "The work of a small number of the observation cases was temporarily restricted, e.g., hours shortened, part-time, etc., by arrangement with the works medical officer." There are certain difficulties about giving individual results to the industrial medical officers: these should be overcome if it is possible without infringing the rights of the individual.

The Information Office, Fiji, have issued an attractive illustrated booklet, with text by Dr. C. J. Austin, O.B.E., describing the Central Leper Hospital at Makogai, Fiji. This hospital serves not only Fiji itself, but also provides a leprosy isolation and treatment centre for New Zealand, the Gilbert, and Cook Islands, Samoa, and Tonga. Makogai is a reef-encircled island of about three square miles in area, consisting of a number of peaks rising to a maximum height of 876 feet, and leading down to sea level by a series of rocky ridges. The most useful land is thus divided into a number of flat areas which are used for the hospital buildings, outlying villages, gardens and staff quarters. In a leper colony such geographical segregation of the various units is most important. It is also important that the life of the community should be as normal as circumstances permit, and photographs showing the patients' villages, the laundries, boat-houses, cinemas, bakeries and schools, testify to the excellent conditions in this colony. The medical and nursing staff consist of the Medical Superintendent (Dr. Austin), 16 missionary Sisters of the Society of Mary, and ten native Sisters. The main hospital area is divided into a large women's section and a smaller one for men. The sexes are segregated. Comparatively able-bodied patients live in the villages, and are able to work in their gardens, being paid for their produce. Fishing, and the rearing of ducks and fowl are also encouraged.

The Royal Institute of Public Health and Hygiene, 28, Portland Place, London, W.1, have published, in booklet form, a history of the Institute, by A. Seymour Harding, the late General Secretary. No price is given. The Institute opened its doors on November 11th, 1903, as "a company formed for the purpose of creating an interest in, and furthering the advancement of, a knowledge of the science of hygiene . . . and also for forming a Museum of Hygiene . . ." Although during the last war the Institute was faced with serious financial embarrassments, 1916 is described as "one in which the war-time activities of the Institute reached a zenith." Much work was done on the problem of food economy, and practical help was given to the general public in the form of demonstrations. During the period between the two wars many distinguished men opened important and valuable discussions at the Institute. Among these were Mr. Lloyd George, Mr. Austen Chamberlain, Mr. Vernon Bartlett, Sir Atul Chandra Chatterjee and Dean Inge. Early in 1919 there was a conference on influenza and its prevention. In 1926 a reception was held by Sir Thomas Oliver, when over 350 visitors, including foreign medical officers of health in England under the auspices of the League of Nations, attended. In 1931 a Departmental Committee was set up to inquire into the working of the law relating to the composition and description of articles of food, and a memorandum was prepared. The booklet is illustrated with portraits of officials, and photographs of the building, lecture hall and kitchen.

PREVENTION OF INFECTION IN MEDICAL WARDS*

By V. D. ALLISON, M.D., D.P.H.

In this paper I will discuss the prevention of cross-infection in medical wards, including maternity wards, infant nurseries, and the wards of infectious diseases hospitals. Much has been written on the subject of cross-infection in the 12 years since Griffith and Lancefield classified haemolytic streptococci into types and groups. This grouping enabled the study of the epidemiology of haemolytic streptococcal infections to be pursued with great accuracy, and added much to our knowledge of the paths by which infection of the upper and lower respiratory tract are spread. This increased knowledge has been applied to the spread of other infections, including virus infections, and has stimulated investigation into methods of preventing the occurrence and spread of infection.

The Problem of Cross-infection

The term "cross-infection" now covers any infection acquired in the hospital environment. Bacteriologically, it means the acquisition by a patient of pathogenic micro-organisms not present on admission to hospital. It includes infections that have different portals of entry into the body—by inhalation, ingestion, implantation, and inoculation— infections of the respiratory tract, such as tonsillitis, rhinitis, common cold, otitis media, scarlet fever, diphtheria, measles, chicken-pox, whooping-cough, rubella, mumps, pneumonia, and thrush; infections of the gastro-intestinal tract such as infantile gastro-enteritis, epidemic diarrhoea of the new born, bacillary dysentery, typhoid and paratyphoid fevers, and Salmonella infections; ward infection of wounds and burns; puerperal sepsis in the maternity wards; and, finally, infections of the skin and mucous membranes such as pemphigus neonatorum and staphylococcal conjunctivitis in infants, vulvo-vaginitis, impetigo and ringworm in children, and mastitis in mothers—truly a formidable list.

Cross-infection is most prevalent and dangerous among infants and children, but adults, in spite of relative immunity to the infectious diseases of childhood, are still vulnerable to the pyogenic cocci and the intestinal pathogens of enteric and dysentery. It is perhaps not too much to say that at present the whole principle of hospitalisation of infants and children is at stake because of cross-infection.

The source of the infection is the clinical case, the missed case, the incubating case, and the carrier, be it patient, member of staff, or visitor; and spread occurs from the secretions, excretions, and discharges of patients, staff, and visitors.

The paths of spread are first by contact with infective material, either by direct personal contact, or mediate contact with infected clothes, ward articles and food—occasionally insects, such as flies, play a part—and second by air-borne infection with droplets, droplet nuclei, and dust.

Hospital Design

Those constructing new hospitals must take advantage of the knowledge and experience gained in recent years. The choice of a site is made with many ends in view besides the prevention of infection. Very important is the supply of natural light, with its bactericidal power (Buchbinder, 1942; Garrod, 1944). The advantages of natural ventilation must be weighed against those of air-conditioning. I feel that natural ventilation, with its variation in rate, temperature, and air humidity is much more stimulating to skin, metabolism, and body defences against infection than the supply of air at a steady rate, an invariable temperature and a constant humidity.

Everyone agrees that the large, open, multiple-bed, undivided ward is obsolete and provides ideal conditions for the spread of infection. The trend is towards smaller units, which should if possible be completely divided structurally one from the other. I do not feel that the subdivision of a 20-or-more-bed ward into units of four beds by the use of glazed screens, as proposed by Elcock (1942) for new hospitals is a nearly drastic enough measure to prevent the spread of

* This and the following paper were read before a meeting of the Welsh Branch on February 17th.

infection. Unfortunately it seems very probable that for a number of years we will have to "make do and mend" in existing hospital buildings, and the installation of partitions from floor to ceiling in large wards would at least be a step in the right direction.

The provision of single-bed wards or cells is essential for the prevention of infection; and in most hospitals, if such wards exist at all, they are quite inadequate in number. It has been suggested that 15% of adult beds in a general hospital (Bullough, 1942) and nearly 50% of beds in a children's or infectious diseases hospital (M.R.C., 1944) should be single-bed wards. Some hospitals have an observation ward divided into cells for the reception of sick children (or adults if necessary) on admission to hospital before they are transferred to the larger-unit ward. In many hospitals nasal and throat swabs are taken of child patients on admission, and the widespread prevalence of Sonne dysentery has led some hospital authorities to have a specimen of stool or a rectal swab examined also. Such procedures will help to decrease the risk of certain bacterial infections being introduced into a ward. But help should also be obtained from a clinical history directed not only to the condition for which the patient is admitted, but also to history of previous infectious diseases and possible contact at home or in school with other infectious diseases, either not detectable or not so readily detectable in the laboratory (such as whooping-cough, measles, chicken-pox, mumps, infective hepatitis, etc.). A knowledge on the part of the medical officer of the local prevalence of infectious diseases and their nature should be a *sine qua non*; such information could be obtained from the Medical Officer of Health or from local practitioners.

Nurses' Training and Duties

What measures should be adopted in the wards, especially the large open undivided ward, to prevent or reduce the hazards of infection? Some years ago (1942) I expressed the view that it was very desirable that ward sisters should have had some fever hospital training and that such experience should be given a high place when nurses are considered for promotion. I still hold this view, as it is in fever hospitals that the basic principles of avoidance of overcrowding, good ventilation, the technique of isolation nursing and its functions, are seen at their best, and where also the spread of infection introduced into a ward, sometimes with tragic results, illustrates by bitter experience the results of all too frequent breakdown of preventive methods. Experience has convinced me that to-day the average nurse has little or no understanding of the sources and paths of transmission of infection, and in general performs her duties either by rote or automatically without understanding the rationale of the technique she employs. She is in close contact—and while on duty in almost constant contact—with her patients, and it is therefore important that she should understand the reason for each step in each procedure she carries out. As the *Lancet* said recently, "The control of hospital infection concerns every member of the staff and not least sister tutors, to whom nowadays the instruction of nurses is largely left and whose teaching is sometimes a little out of date. The teaching of the nature, source and mode of spread of infection is a job that should primarily belong to the hospital bacteriologist." I am, needless to say, in agreement with that view.

It is desirable that, when duty is allocated to nurses, the risk of cross-infection be borne in mind and administrative needs subordinated. For example, the nurse on toilet duty in the children's or infants' wards should not also be employed in the milk or food kitchen or serving food.

All members of the staff should be immunised against diphtheria and enteric fevers. I know of three recent outbreaks of typhoid or paratyphoid affecting nurses in hospitals—one a general hospital, one an infectious diseases hospital, and the third a mental hospital—and in none of them had the nurses been immunised. In my laboratory one of the technical staff contracted typhoid fever through negligence in disposing of a specimen of stool from a typhoid patient. All the staff have now been either immunised with T.A.P.C. vaccine, or have stated in writing that they do not wish to be immunised.

The precautions advisable to prevent and control infection of puerperal women by midwives, doctors, and medical students are well known. But I do not think that throughout the country generally full advantage is being taken of the laboratory facilities available for tracing the sources of infection and applying the lessons learnt.

Encouragement of the staff—medical, nursing and domestic—to report minor ailments such as acute upper respiratory tract infection, diarrhoea and skin sepsis is an important preventive measure. The ailing nurse who carries on as a martyr to her duty may be a menace to her patients. Anyone with such minor ailments should certainly be kept from contact with infant, maternity, and surgical patients and should not prepare infant feeds. This applies in even greater measure to kitchen and food-handling personnel, where the handling of food by a carrier of dysentery or food-poisoning bacilli may have disastrous effects.

Personal hygiene should be stressed—a plentiful supply of soap, running water and dry towels should be available. The roller towel is a dangerous anachronism in a hospital. The hands should be washed thoroughly *before* preparing or serving food or attending to a patient, *after* attending to a patient, dealing with excreta, changing a napkin, sorting soiled linen, handling pathological specimens, and *after* using the W.C., guarding a sneeze, or using a handkerchief.

It is not possible to go into the details of the care necessary in the storage, cooking, handling and serving of food, the handling, cleansing and storage of crockery, the importance of breast-feeding of infants, the use of pasteurised milk, precautions to be observed in the preparation of bottle feeds, the pros and cons of a central or a ward milk kitchen, the taking of temperatures, the risks of common use of toys and books, the disposal of soiled linen, and the cleansing and disinfection of baths—all of importance as potential and proven vehicles in the transmission of infection by inhalation, ingestion or implantation.

Air-borne Infections

In recent years much attention has been paid to air-borne infection by droplets, droplet-nuclei and dust, both in this country and in the U.S.A. The importance of the part played by air-borne infection is of course generally accepted, but a few points may be of interest. Sneezing, according to the vigour of the sneeze and other factors, expels from 5,000 to 100,000 droplets, and adds considerably to the bacterial load in the air of a room or ward. Spray leaves the mouth at a rate of about 10 m.p.h. and is atomised to droplets, varying in size from 7 microns (1/140 mm.) to 1,000 microns (1 mm.) or more in diameter, about two-thirds being smaller than 100 microns (1/10 mm.). Wells considers 100 to 200 microns (1/10 to 1/5 mm.) as the dividing line between droplets and droplet-nuclei, the former having a short range of travel and tending to settle rapidly a few feet away on bedclothes, furniture, floor, etc., while the latter evaporate very quickly ($\frac{1}{2}$ sec.) to a diameter of 5 microns or less (1/200 mm.) and tend to remain suspended in the air, wafted about by every breeze that blows, including inhalation and exhalation. Valuable investigations directed towards the control of this method of transmission of infection have been carried out in this country by Andrewes (1940), Bourdillon and Lidwell (1942), van den Ende and Thomas (1941), Wright, Cruickshank and Gunn (1944) and others; and in U.S.A. by Wells (1942), Hollaender (1943) and Robertson (1942), to mention a few. A symposium of the main investigations along these lines has been published in U.S.A. under the title *Aerobiology* (1942). Mitman's presidential address (1945) to the Fever Group of the Society of Medical Officers of Health, included an admirable summary of this volume.

Ultra-violet light

On the question of prevention of air-borne infection there has been a divergence in the lines of investigation pursued in U.S.A. and in this country. In the U.S.A. studies have in the main been directed towards the air-sterilising value of ultra-violet radiation as a method of reducing incidence of infection. This involves the use of germicidal mercury-vapour

arc lamps of low voltage with negligible heat production and a high-transmission glass that transmits radiation with a main emission band very close to the maximum germicidal wavelength of 2,650 Å.U. These lamps are now being widely used in U.S.A. for disinfecting air in hospitals, nurseries, operating theatres, and schools, and a committee set up to review published reports on the results declared that the results were sufficiently encouraging to justify further study. The main object of the lamps is to kill sufficient bacteria in the air of a room to convert 25 to 100 actual turn-overs of air per hour to the equivalent of 100 to 500 turn-overs per hour as measured by the bacterial content (American Hospital Association, 1940)—a ventilation rate impossible by natural or mechanical means. The main disadvantage is that the radiations become ineffective in the presence of dust. This method of preventing or reducing air-borne infection has been little studied in this country.

Oiling.—In Great Britain studies and progress have been directed mainly against dust hazards by the oiling of floors and treating blankets, sheets and patients' garments with technical white oil. To quote only one experiment, Wright, Cruickshank and Gunn (1944) have shown that oiling of floors alone in a scarlet-fever ward produced only a slight reduction in the haemolytic streptococcal content of ward air, especially during bedmaking, but when blankets, sheets and patients' garments were also treated with oil the mean bacterial count in the air was found to fall by 91% compared with a control ward, and the haemolytic streptococcal count fell by 98%. It would appear, therefore, that to reduce dust-borne infections it is essential for clothing to be oiled—this is understandable when it is realised that most ward dust is derived from blankets and woollen garments. There are indeed some who hold that the woollen blanket should disappear or at least be sewn inside cotton or artificial silk covers.

Aerosols.—Both in this country and in the U.S.A. studies are in progress to attempt to control air-borne infection by means of disinfectant vapours or mists (aerosols) such as resorcinol, hexylresorcinol, sodium hypochlorite, and propylene, ethylene, and other glycols. Drawbacks to these methods are that aerosols are ineffective against gross particles such as dust, and that humidity is an important factor in the efficiency of different aerial disinfectants: e.g., the optimum relative humidity for lethal action on bacteria in air using resorcinol is 75%, using propylene glycol 60%, and tri-ethylene glycol 40 per cent. Lactic acid, the most recent aerosol (Lovelock, Lidwell and Raymond, 1944), is effective over a wide range of relative humidities (40 to 85%) and appears to exert a highly efficient bactericidal action in a concentration of 10 mg. cu. metre.

Combined Measures.—It is obvious that these methods of controlling air-borne infection are still in an experimental stage, and that it is impossible to assess their relative values till much more work is done. But it does seem that a combination of methods for the suppression of dust, such as oiling floors and bedclothes, and air-sterilising agents such as ultra-violet rays or aerosols at present offers the best prospect of success in preventing or considerably reducing the incidence of air-borne infection, when used as an adjunct to other preventive methods. Since this was written, a paper by Robertson and his co-workers (1944) has appeared reporting investigations which support and advocate this view. The results of laboratory and field investigations in hospitals and barracks led them to the conclusion that maximum diminution in the number of air-borne pathogens is brought about by a combination of aerial disinfection (glycol vapour 1 c.c. to 10,000 cu. ft.) combined with measures to eliminate dust. The data indicated a definitely lowered incidence of acute respiratory infections in soldiers occupying barracks in which floors and bedclothes were treated with oil as compared with controls. Workers in the U.S.A. are therefore now alive to the importance of reducing dust hazards by the use of oil, as well as air-borne droplet risks by the use of aerosols. One interesting fact brought out in the discussion following Robertson's paper was the statement by Truman Potter that propylene and tri-ethylene glycol vapours were lethal for tubercle bacilli atomised into a test chamber, even when the organisms were coated with a thin film of mucus from saliva.

I think that in this country matrons and ward-sisters may be prejudiced against spoiling the attractive appearance of the brightly polished ward floors by the use of oil. I have been looked at askance when I suggest oiling floors, though on one occasion in a new and modern hospital I was able to show the dust glancing along the floor and glinting in the sunlight, dancing to the air-currents produced by ventilation and movements of staff and patients. If the Royal College of Nursing could first be convinced, they might be induced to help to break down the prejudices which favour the polished floor.

Important among adjuncts to procedures already mentioned is the wearing by members of the staff of efficient face-masks covering mouth and nose in infant wards, surgical wards, and when attending ear, nose, throat, or mouth patients and puerperal patients. They should also be worn in other wards during outbreaks of respiratory infection, and by visitors to children's or maternity wards. We recognise the dangers of the pocket-handkerchief, but it is still the best natural mask against spread of droplet-infection from coughing and sneezing. Personally, I think that, as in tuberculosis sanatorium practice, every child and adult patient in hospital should have a supply of pocket handkerchiefs, and that on admission they should be told that all coughing and sneezing must be guarded by the use of a handkerchief frequently renewed. The alternative of a supply of paper tissue handkerchiefs, used once and destroyed, is worth considering. For the suppression of dust, if oil is not used, cleaning should be by vacuum, washing, and damp dusters or mops; no dry dusting should be done.

Chemoprophylaxis

It is too soon yet to estimate the value of chemoprophylaxis in the control of spread of infection. The sulphonamides have been reported in U.S.A. to be effective in controlling outbreaks of dysentery in mental hospitals, in preventing recurrences of streptococcal infections of the throat in rheumatic fever patients, and in clearing meningococci from the naso-pharynx of child carriers in closed institutions during epidemic prevalence of cerebrospinal meningitis. Here a word of warning is necessary on three counts: first, small doses may lead to the production of sulphonamide-resistant strains; second, prolonged dosage may lead not only to toxic effects but also to sensitisation; and, thirdly, there is a real danger that the availability of sulphonamide drugs and of penicillin may lead to relaxation and disregard of the technique and procedures necessary to prevent and control infection. This was recently shown in a maternity unit in Ontario (McClure, 1944), in which puerperal sepsis was present for over five months, involving 40.6% of 502 patients. When investigated, haemolytic streptococci of the same type were found in the perineal pads of 24 out of 38 mothers examined, and 20 of the mothers had an abnormal puerperium. The infections were being kept within bounds by sulphonamides, but in two patients penicillin was necessary to effect a cure, probably due to the organism being sulphonamide-resistant. Many factors predisposed to the occurrence of infections—overcrowding, inadequate sterilisation of dressings and outfits, dry sweeping, and insufficient nurses with poor technique.

Obstacles to Progress

For the proper nursing of the patient it is necessary to avoid overcrowding and to have adequate and intelligent nursing staff with a due proportion of trained to untrained nurses. It is over 80 years since Florence Nightingale first inveighed against the large, undivided ward, overcrowding, insufficient ventilation, and low nursing standards—factors which the medical profession now unanimously agree contribute largely to spread of infection. Have we progressed far in these 80 years? I am doubtful, but I think we have done more in the last 15 years than in the previous 65 years. We have become more than ever before conscious of the dangers of and the amount of morbidity due to hospital infection. The reawakened interest was shown first by medical superintendents and administrators of infectious diseases hospitals, followed by the paediatricians and surgeons. We know how

infections arising in hospital have in the past tended to be disregarded or not recognised so long as they were mild and not too widespread, and taken seriously only if the infections were severe or one or more deaths occurred.

In relation to hospital infection I would class the medical staff of hospitals, visiting and resident, into the ignorant, the die-hard unbelievers, the indifferent, and the actively interested. The ignorant are largely the recently qualified doctors, and they are ignorant because they have not been properly taught and have to gain their knowledge through experience and mistakes. This class is decreasing but not quickly enough. As residents in hospital, they must be on the look-out for the first signs of spread of infection, and must initiate measures to control it. It is on them and on the nursing staff that we must largely depend to control infection, because they are in almost constant contact with the patient, whereas the visiting physician or surgeon sees each patient for a short time and many tend to regard each patient in a multiple-bed ward as a separate morbid unit, and not as a member of a small herd susceptible to spreading infection. We know the disasters which may occur if the patient with rheumatic fever or thyrotoxicosis or failing heart gets a throat infection with a haemolytic streptococcus. The die-hard unbelievers, found mainly among the older members of the staff who are unreceptive of newer knowledge, have also decreased greatly. But there are still far too many who are indifferent, and it is more than unfortunate if these become teachers of medical students. The actively interested are increasing rapidly in number, and it is to be hoped that their interest will be sustained, because they will have to fight against ignorance, apathy, and obstruction. M.R.C. War Memo. No. 11 (1944) on *The Control of Cross-Infection in Hospitals* has been taken very seriously by many hospitals, mostly teaching hospitals, where committees have been formed to consider the whole question and act on the recommendations put forward, especially as regards ventilation, bed-spacing, isolation accommodation, adequate sterilisation and disinfection equipment and technique, and sufficient trained staff to maintain a high-grade nursing technique.

Hospitals in which little or no action is taken to prevent or control infection may be said to have almost a vested interest in disease. I would like to see the success of work in a hospital judged, not only by statistics showing among other things the increasing number of cases admitted for medical or surgical treatment during each year, but also by figures showing decreases from year to year in the number of bed-days per patient, in the number of cases of infection arising in hospital, and in the number of cases transferred to isolation hospital.

Inoculation Infection

Inoculation infection affects not only school immunisation clinics, but also hospital wards and out-patient clinics. A number of outbreaks of infection with haemolytic streptococci, *Staph. aureus* and even tubercle bacilli, at the inoculation site after injection with diphtheria prophylactic A.P.T., have come to our notice during the last three years. There is urgent need for a radical overhaul of the technique of sterilisation, use, and care of syringes, and the teaching of careful and fool-proof methods to medical students and nursing staff. It is strange how, when a series of severe reactions, sometimes accompanied by abscess formation, occurs in a diphtheria immunisation clinic on a particular occasion the cause of the reaction is nearly always attributed to the A.P.T., when probably the inoculation technique is at fault. That the sterilisation, care, and use of the lumbar puncture needle and of syringes used for spinal analgesia also need attention has been shown by Smith and Smith (1941), who reported a hospital outbreak of meningitis caused by infection from "sterile" water in which needles and syringe were placed. Evans (1945) has also recorded two fatal cases of *Ps. pyocyanea* meningitis after spinal anaesthesia in hospital; and Cairns (1945) has been impressed by the number of cases of meningitis after lumbar puncture. Another disturbing indication of the failure of current syringe technique is the accumulating evidence that these are not the only inoculations which have been followed by untoward results. The association of hepatitis and jaundice with the administration of insulin (Graham,

1938), the gold treatment of arthritis (Hartfall, Garland, and Goldie, 1937; Hartfall, 1944), and the treatment of syphilis with organic arsenicals (MacCallum, 1943; Salaman, King, Williams, and Nicol, 1944; Sheehan, 1944) indicate that the increasingly widespread use of biologicals and drugs administered by syringe accentuates the risks of infection. Full precautions should be taken by the adoption of a careful and rigid technique of syringe sterilisation.

Conclusion

In conclusion, I recommend the practice of the procedures proposed in M.R.C. War Memos. No. 6 (1941) on *The Prevention of Hospital Infection of Wounds*, and No. 11 (1944) on *The Control of Cross-Infection in Hospitals*. I have omitted to lay any stress on the part played by the bacteriologist in the prevention and control of hospital infection, because his rôle is ancillary to administrative procedures and to the ritual of technique and nursing practice. But I feel that more use should be made of his knowledge and experience than has hitherto been the case. He can be as observant and critical as the surgeon in the detection of flaws in aseptic technique, and in advising on procedures which perhaps come less than they should within the direct purview of the physician and surgeon. I lay stress on the importance of better education of the nurse and medical student in the principles and practice of preventive measures in their application to hospital practice.

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PREVENTION OF HOSPITAL INFECTION OF WOUNDS

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In the early months of the war the members of the pathology staff of the Welsh National School of Medicine tried to increase the interest of hospital authorities in the problem of hospital infection. The hospital medical authorities who were approached agreed to put into operation as far as possible the recommendations which are included in the M.R.C. publication *The Prevention of Hospital Infection of Wounds* which appeared in 1941. After four years we are in a position to judge how many of these recommendations were actually put into effect, or, in some instances, how few. But we cannot say that we are in a position to judge what benefits, if any, have occurred. The main rules concerned a team method for surgical dressing, non-touch technique, efficient masking, the oiling of floors, and efficient methods for the sterilisation of instruments. These were directed

particularly to prevent streptococcal infection. Such infection was expected in war wounds if the experience of the last war was to be repeated. We have seen, however, extremely little streptococcal infection. Some cases returning from North Africa in 1942-43 showed it, but practically none of the wounded from Europe since the summer of 1944 have had this infection. We cannot say whether the absence of streptococcal infection is due to the better surgical technique in hospitals, or to the better technique in the field, or to chemotherapy—for there has been a liberal and almost universal use of sulphonamides or penicillin—or to all together. Although streptococcal infections have been few and staphylococcal infections also comparatively rare, infections with gram-negative bacilli have been quite common and have often been acquired in hospital; and it is mainly about such infections that I wish to speak. At the present time the incidence of such infections appears to be a better criterion of hospital infection.

Hospital Infection with Gram-negative Bacilli

I came into contact with this form of hospital infection when working with Dr. Dillwyn Thomas at Sully. He had been draining tuberculous cavities by means of a catheter inserted through the chest wall (Monaldi technique). Tuberculous cavities in their natural state are never secondarily infected, but after drainage they usually become so. We met a variety of organisms, but most commonly *Ps. pyocyanea*. In order to try out chemical substances which could control this infection, I looked for pyocyanus infections in other hospitals, especially in surface wounds and ulcers which would be accessible to treatment and where results could be judged. In the several hospitals where I looked for pyocyanus infection, there was ample material. These included general hospitals, and hospitals where military patients with recent and old wounds were being treated. It was obvious that many cases of burns and many surface wounds with skin loss, including compound fractures, became infected with gram-negative organisms and especially pyocyanus while in general hospitals. Some had other infections as well. Investigations were carried out to see how far it would be possible to prevent infection in burns as Colebrook and others had done.

Burns

I started by treating the burns in a casualty department. Operating theatre conditions were used; no gloves were worn, but a strict non-touch technique was employed. The dressings were changed as infrequently as possible, and in spite of the fact that these patients were treated at home and returned for dressings about every five days the incidence of infection in 70 cases was very low, and no pyocyanus infection occurred in any of them.

Possibly these results contrasted with those of patients in the wards because they were comparatively minor burns, but in April, May, and June of 1944, when hospital beds for civilians were scarce, we treated as out-patients many who in normal times would have been admitted. Again, the incidence of infection was low and no pyocyanus infection occurred. Since that time many in-patients have been treated likewise. When the technique has been rigidly followed, and provided the dressings have been infrequent and carried out under theatre conditions, the results have on the whole been satisfactory. It has not been possible to prevent infection in deep burns when sloughing of the whole skin thickness occurred, but there has been great improvement in the results in superficial ones.

Formerly, when dressings had been done in wards without rigid technique, and especially if they had been done frequently, infection became common and the results indifferent or poor. Burns of a minor degree which should have healed in ten days had been converted as a result of infection into granulating areas requiring weeks to heal, and often requiring skin-grafting. If the rules for wound dressings set out in the M.R.C. memorandum could have been fulfilled such infection might not have arisen. For a variety of reasons many of these rules were not obeyed. In more than one hospital, in spite of the great efforts made, it has not been practicable to finish

the cleaning at an early hour in the morning owing to the shortage of maids, so that dressings may begin shortly after sweeping and dusting are finished; or, as we have observed on several occasions, dusting and dressings may go on together. We have rarely seen a team working at dressings, but only a single nurse. The non-touch technique usually collapses in these circumstances. Equipment has been inadequate and not always from shortage of supply, as the ward staffs complain of inadequate issue of forceps and other instruments even when these are obtainable. Traffic in the ward is not avoided, or shall I say unavoidable. This is especially true in our main teaching hospital, in which several firms under different surgeons share a ward, and where ward rounds and dressings often coincide. The medical staffs and students who come and go have little respect for dressings. The masks are usually a single layer of linen. Many of the medical men do not use masks in the ward, so that it is hardly possible to convince the nursing staff or students that they are necessary. My conclusion is that where conditions such as I have mentioned prevail the dressing of burns and other open wounds in wards is dangerous. To discipline a large and busy ward so as to make it safe would in some instances appear so formidable a task that an alternative solution would seem the proper one—namely, that dressings should not be done in the wards. A room approaching as near as possible to the theatre but without elaborate equipment should be set aside. In practice, this has proved satisfactory. Surgeons agree that operations carried out under theatre conditions carry little risk of infection, and the aim should be to approach such theatre conditions for the dressing of serious open wounds. In this connection I would point out the need for supervision in the casualty departments and minor operating theatre, where laxity in technique leads not infrequently to serious trouble.

Local Application of Penicillin

If it is possible to fulfil the rules of asepsis which have been formulated, then under good conditions ward dressings can be carried out in comparative safety. This is illustrated by the experience at a hospital receiving wounded. In the early part of last year it was announced that penicillin would be available for the treatment of wounded from the anticipated battle in Europe, but owing to the shortage of supplies it was recommended that where possible treatment should be local. It was decided, therefore, to use local penicillin treatment for compound fractures, and a ward was allotted for this purpose and the staff specially instructed in the prevention of hospital infection. Results in that ward were excellent. The number of wounded admitted to hospital, however, was great, and surgeons working in other wards wished to use penicillin, which they did. In one of these wards, where the staff were fewer, relative to the number of patients, and had not been specially trained, and where precautions for asepsis were lax, the incidence of gram-negative infection occurring in hospital was extremely high, causing suppuration and apparent delay in healing.

It is interesting to contrast two of the wards in which penicillin was used and where the staff had not been specially trained. In one of these the surgeon, during the first two or three weeks, took his patients to the operating theatre for the dressings. Dressings were usually done only once a week. The incidence of infection was lower than in a second ward where dressings were carried out in the ward as frequently as every two or three days, or even every day, and where it was the habit of the sister to order the dressings to be done on all patients unless she had instructions to the contrary.

A similar experience with gram-negative infection with a trained and untrained staff is recorded by McKissock, Logue and Bartholomew (1944). With a specially trained staff local penicillin in neurosurgery was safe, but under less favourable conditions, with a staff not so trained, hospital infection was frequent.

It may well be asked: Is the trouble and expense worth while? Local or general chemotherapy can be used to prevent or treat streptococcal and staphylococcal infection, so why worry? Few people seem to have regarded gram-negative organisms in a wound as anything more than a nuisance.

Hitherto, however, when wound infection has been of a mixed type the streptococci and staphylococci have been blamed for all the mischief, and the coliforms and pyocyanus not blamed; the latter have even been praised. The selective removal of streptococci and staphylococci by penicillin, however, has shown that the residual gram-negative infection may cause suppuration and delay in healing, at least in surface wounds with loss of skin. Moreover, the introduction of penicillin has created new problems in hospital infection. Penicillin has no effect on gram-negative bacilli, and sometimes seems to encourage their growth, especially in the case of *Ps. pyocyanea*. For certain conditions—namely, meningitis, empyema, and septic arthritis in addition to wounds—penicillin is used locally. Replacement of a streptococcal or pneumococcal meningitis by one due to *Ps. pyocyanea* is a definite risk. Already some surgeons are dismayed because, having quickly overcome, by injections of penicillin, an empyema due to streptococci, staphylococci or pneumococci, they are left with one due to *B. coli* or *Ps. pyocyanea*. This form of hospital infection is serious, and demands that rigid aseptic technique be performed. I am not implying that before penicillin was introduced hospital infection did not occur in empyemata. The tube-and-funnel method of washing out a pleural cavity was a common source of such infection. This method has been condemned but is still used.

Conclusion

The problem of surgical infection in hospitals is still an important one. On the clinical side it does not seem to be anyone's job to attend to its prevention. Students and nurses appear to receive inadequate instruction in the subject. If hospital infection is to be taken seriously it must be the duty of someone in authority to supervise methods and teaching. Ward technique in general needs to be improved, or special rooms for wound dressing provided.

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TUBERCULIN PATCH TEST

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In the past few years many investigations have been carried out with the patch test in an attempt to test its worth in relation to the Mantoux test. Most workers in this country (Hart, 1938; Anthony, 1939; Court, 1939) found the patch test as reliable as the Mantoux in testing the average hospital and school child. The same results are claimed by American workers (Pearse, Fried, and Glover, 1940; Reisman and Grozin, 1941). Brown (1939) found the patch specific but less sensitive than the Mantoux test. Anzen (1937) showed the patch test was reliable in older children. Comparatively little work has been done in checking the efficiency of the patch test in cases known to be infected. Reisman and Grozin (1941) tested 1,000 children of the hospital class, but only eleven were tuberculous.

It was originally planned in this investigation to compare results on Mantoux testing with those of patch testing in 200 children of hospital class. In cases known to be tuberculous the Mantoux test was almost consistently positive, but results with the patch test showed a considerably smaller percentage of positive reactors. Although this investigation was not completed, results with the patch test in tuberculous cases were disappointing. The disappointing feature did not appear to be a question of pseudo-reactions (Volmer and Ripps, 1943) in Mantoux testing and not in patch testing, nor did it appear to be a question of allergy or diminished sensitivity due to advanced lesions or moribund states (Hayes *et al.*, 1937).

The slightest abrasion of skin greatly increases the absorptive capacity (Schalek, 1931; Sutton and Sutton, 1935). It was thus decided to scarify the skin superficially and to apply the patch test to see if better results could not be obtained in patients known to be tuberculous. Since the patch test, it is stated, is equivalent in sensitiveness to the 1/1,000 dose

of the Mantoux test, the importance of penetration of this small dose seems logical. Volmer and Ripps (1943) state that only small amounts of tuberculin are absorbed percutaneously; but this is sufficient to bring forth a positive reaction in an infected person with tuberculin allergy. Lovett (1929) showed that removal of oily secretions by rubbing the skin with ether resulted in more accurate results with the patch test. This was merely a step to ensure more intimate contact of skin with tuberculin. The Pirquet test (1907) of boring through the skin surface and then applying old tuberculin was formerly in use as a method of introducing it into the deeper layers of the skin. The later modification of the Pirquet test consists of an application of old tuberculin to superficial scarification (Lilley, 1941). The method that is to be described is also a modification of Pirquet's test, but the patch test is used instead of old tuberculin (modified patch test).

Material and Methods

An area of skin was cleansed with ether-meth. either anteriorly over the upper part of the sternum or posteriorly just lateral to the upper dorsal spine. After evaporation, the uppermost part of a tuberculin patch test ($\frac{1}{4}$ in.) was stuck on to the skin in the same area. The remainder of the upper part of the patch test was then brought toward the skin to estimate where the tuberculin square would fall; a scratch was made on a corresponding area of the skin, and this part of the patch was pressed to it. The same was done for the control square and then the lower square. One or two horizontal or vertical scratches, varying in length from $\frac{1}{4}$ to $\frac{1}{2}$ in., were made with a small hypodermic needle. A separate needle was used for each patient; the needles were sterilised and kept in ether-meth. before use. Particular care was taken to see that the barrel of each needle was dry. A second patch was then placed in same cleansed area alongside of the scarified patch. No scarification was done here. The modified or scarified patch was always done on the left side, and the other patch on the right. This prevented confusion in case the scarified area could not be identified. Both tests were done on 229 patients, varying in age from nine months to 19 years. Results were read 72 hours later, a method suggested by Taylor (1939). A positive reaction was one which showed an area of indurated redness and oedema at least 7.5 mm. in diameter, with or without papules and vesicles. The middle portion of the patch acted as a control for both tests.

Results

On the basis of diagnosis, a history as to contact and reaction of either test, cases are divided into the following three groups:—

Group 1.—Allergic and non-allergic reactors with tuberculous lesions. This group included 114 children: 106 (93%) were positive to the modified patch test, and eight (7%) were negative. With the unaltered patch, 62 (54.4%) were positive and 52 (45.6%) negative. (See Table I.)

Group 2.—Allergic reactors without tuberculous lesions. No tuberculous lesions were present in this category, but allergic reactions were recorded. A history of contact was present in some of these cases. There were 14 in the entire group; every case was positive to the modified patch test; with the patch test, five were positive and nine negative. (See Table II.)

Group 3.—The normal group. There were 101 cases in this series. Every child was negative to both tests; four of the cases included in this series were definite contacts, but gave no reaction to either test. (No table is shown for this group.)

In Table I, Case No. 103 was the only reactor to the patch test that did not react to the modified patch. Case No. 41, in the same table, was negative to both tests during the rash stage of measles, but became positive shortly after disappearance of the rash (with both tests). Case No. 114 (Table I) was diagnosed as spinal caries, and associated with this was a moderate but widespread ichthyosis. Two patches were applied in the usual way in a particularly rough area of skin; both tests were negative. The same procedure was repeated in a comparatively less thickened area and scarification was made more intense; the modified patch was positive, the patch test negative.

TABLE I

Results of Both Tests in Allergic and non-Allergic Reactors with Tuberculous Lesions

Case No.	Age	Diagnosis	Modified Patch Test			Patch Test		
			H.	C.	B.	H.	C.	B.
1	12	Enlarged root	x	x	x			
2	16	P.T.	x	x	x			
3	15	Tb. pleurisy with lung involvement	x	x	x			
4	11	Mediastinal adenitis	x	x	x			
5	9	Tb. peritonitis	x	x	x			
6	16	P.T.	x	x	x			
7	16	Tb. pleurisy	x	x	x			
8	9	P.T.	x	x	x			
9	17	Tb. pleurisy	x	x	x			
10	14	P.T.	x	x	x			
11	10	Mediastinal adenitis	x	x	x			
12	15	P.T.	x	x	x			
13	16	Pleurisy and spinal caries	x	x	x			
14	15	P.T.	x	x	x			
15	16	P.T.	x	x	x			
16	17	P.T. and cervical adenitis	x	x	x			
17	9	P.T.	x	x	x			
18	14	Tb. pleurisy	x	x	x			
19	8	P.T.	x	x	x			
20	7	Mediastinal adenitis	x	x	x			
21	8	Mediastinal adenitis	x	x	x			
22	16	P.T.	x	x	x			
23	8	Pleurisy and Tb. knee	x	x	x			
24	7	Tb. cervical adenitis	x	x	x			
25	5	Tb. knee	x	x	x			
26	12	Tb. hip	x	x	x			
27	12	Tb. hip	x	x	x			
28	11	Tb. sacro-iliac	x	x	x			
29	14	Tb. hip	x	x	x			
30	9	Ankle and P.T.	x	x	x			
31	6	Tb. hip	x	x	x			
32	18	Tb. hip	x	x	x			
33	18	Tb. hip	x	x	x			
34	14	Tb. spine	x	x	x			
35	13	Tb. sacro-iliac	x	x	x			
36	7	Tb. knee	x	x	x			
37	13	Tb. bilateral hip and knee	x	x	x			
38	6	Tb. spine	x	x	x			
39	9	Tb. hip	x	x	x			
40	13	Tb. hip	x	x	x			
41	12	Tb. peritonitis	x	x	x			
42	7	Tb. cervical adenitis	x	x	x			
43	16	Tb. knee	x	x	x			
44	17	P.T. spine and ankle	x	x	x			
45	15	Tb. spine	x	x	x			
46	5	Tb. spine	x	x	x			
47	15	Tb. spine	x	x	x			
48	10	Tb. hip	x	x	x			
49	15	Tb. sacro-iliac	x	x	x			
50	13	Tb. hip	x	x	x			
51	6	Tb. cervical adenitis	x	x	x			
52	19	Tb. hip	x	x	x			
53	11	Tb. hip	x	x	x			
54	9	Tb. knee	x	x	x			
55	4	Tb. spine	x	x	x			
56	4	Tb. os calcis	x	x	x			
57	4	Tb. elbow	x	x	x			
58	3	Tb. hip	x	x	x			
59	4	Tb. knee	x	x	x			
60	5	Tb. knee	x	x	x			
61	3	Tb. spine	x	x	x			
62	4	Tb. elbow	x	x	x			
63	4	Tb. spine	x	x	x			
64	4	Mediastinal adenitis	x	x	x			
65	4	Tb. peritonitis	x	x	x			
66	7	Tb. hip and spine	x	x	x			
67	5	Tb. lumbar spine	x	x	x			
68	5	Tb. peritonitis	x	x	x			
69	3	Mediastinal adenitis	x	x	x			
70	5	Tb. dactylitis	x	x	x			
71	3	Tb. knee	x	x	x			
72	4	Tb. peritonitis	x	x	x			
73	3	Mediastinal adenitis	x	x	x			
74	2	Mediastinal adenitis	x	x	x			
75	6	Ghon's focus	x	x	x			
76	4	Ghon's focus	x	x	x			
77	2	Mediastinal glands	x	x	x			
78	4	Mediastinal glands	x	x	x			
79	3	Tuberculiæ.	x	x	x			
80	4	Tb. hip	x	x	x			
81	3	Tb. abscess groin secondary to skin lesion	x	x	x			
82	6	Tb. knee	x	x	x			
83	9	Mediastinal adenitis	x	x	x			
84	12	P.T.	x	x	x			
85	15	P.T. and knee	x	x	x			
86	14	P.T.	x	x	x			
87	12	Tb. Hilar adenitis	x	x	x			
88	9	Tb. mesenteric glands	x	x	x			
89	8	Tb. cervical adenitis	x	x	x			
90	14	Tb. knee	x	x	x			
91	13	P.T.	x	x	x			

Case No.	Age	Diagnosis	Modified Patch Test			Patch Test		
			H.	C.	B.	H.	C.	B.
92	17	Pleurisy						
93	13	Pleurisy						
94	16	P.T.						
95	12	Mediastinal adenitis						
96	7	Mediastinal adenitis						
97	17	P.T.						
98	7	Mediastinal adenitis						
99	6	Mediastinal adenitis						
100	9	Mediastinal adenitis						
101	7	Mediastinal adenitis						
102	8	Mediastinal adenitis						
103	5	Mediastinal adenitis with collapsed lobe						
104	15	Tb. pleurisy						
105	2	Tb. peritonitis						
106	11	Tb. dactylitis						
107	16	Tb. knee						
108	6	Tb. perihilar glands						
109	8	P.T.						
110	12	Tb. perihilar glands						
111	13	Tb. rib						
112	12	Tb. pleurisy						
113	2	P.T.						
114	12	Tb. spine and ichthyosis						

P.T. Pulmonary tuberculosis. H. Human tuberculin. C. Control. B. Bovine tuberculin. x Slightly positive reaction. + Moderately positive reaction. ++ Strongly positive reaction. - False positive (in control area).

In Table I, Cases Nos. 70 and 75 both showed slight inflammatory reactions in the control area. Case No. 116 (Table II), developed slight sepsis in positive areas several days after a positive reaction occurred. No severe local reactions or any constitutional upsets were observed in any case in the entire series. Positive reactions in both of the above groups persisted for a week in most cases; some reactions were present even after a month. This same feature has been recorded by Reisman and Grozin (1941) for the patch test. The reactions with the modified patch were, however, more intense than the non-scarified patch.

The average age of the entire infected group (Group 1) was nine years six months. Using the results of the unaltered patch test, the average age for negative reactors in this same category was eleven years four months. The average age of the positive reactors in this group was eight years two months (also using patch test). It is thus evident that the greatest number of children who reacted negatively to the patch test were the older children. The modified patch test showed no variation which could be attributed to the varying age of the subjects tested in Group 1.

Comment

The modified patch test is a more sensitive instrument in detecting allergic reactors. The reason for this seems to be that this test ensures proper absorption of tuberculin. In this connection, it is interesting to mention the results of Anzen (1937), who showed that the patch test was less reliable in older children. The same is true of the results in the 114 cases of Group 1. It is possible that the penetration of tuberculin due to difference in texture of skin is much easier in younger than in older children. Von Pirquet (1907) pointed out that a positive reaction to tuberculin was an allergic vascular response. The penetration of tuberculin into the dermal layer of skin is essential before a positive reaction can result. While absorption undoubtedly occurs when the patch test is applied to the intact skin, the Pirquet modification ensures more intimate contact of tuberculin with the vascular dermis. The control area in both tests rules out pseudo-reactions (Volmer and Ripps, 1943). The modified patch test does not introduce any surplus amounts of tuberculin or any foreign matter; all it does is ensure proper penetration and better absorption of tuberculin.

Tables I and II show that some patients reacted to one type of tuberculin (bovine or human) or to both. These reactions are regarded as positive, but in view of insufficient experimental evidence the specificity of the selective aspect of these reactions must be considered doubtful. The small series of cases in Table II also points to the modified patch test as a more sensitive detector of allergic reactors. This is substantiated by the history of contact in eight cases and one case

TABLE II

Results of Both Tests in Allergic Reactors Without Tuberculous Lesions

Case No.	Age	Contact	Diagnosis	Modified Patch Test			Patch Test		
				H.	C.	B.	H.	C.	B.
115	4	Mother Tb.	Chronic Conjunctivitis	x	x	x	x	x	x
116	13	?	Epilepsy and Mental Deficiency	x	x	x	x	x	x
117	7	Nil	Erythema Nodosum						
118	13	Aunt Tb.	Scabies						
119	4	Nil	Observation Chronic Otorrhoea						
120	9 mth.	Mother died of Tb.	Observation Case						
121	5	Nil	Observation Chest						
122	16	Mother died of Tb.	Observation Chest						
123	11	Nil	Observation Abdomen						
124	3	Father died of Tb.	Observation Chest						
125	1 yr.	Mother Tb.	Observation Case						
126	16	Nil	Abdominal Investigation						
127	2	Brother died of Tb.	Observation Chest						
128	13	Aunt Tb.	Pneumonia						

of erythema nodosum. In four cases not shown in either Table I or II definite histories of contact with tuberculous cases were present (no lesions were found), but all four were negative to both tests. Unfortunately no dates were obtained as to when contact ceased. It is possible that these children were tested in the ante-allergic period (Kayne, Pagel, and O'Shaughnessy, 1939), and this might account for the negative results.

Summary and Conclusion

The modified patch test is a more sensitive detector of allergic reactors. It ensures better absorption of tuberculin than the patch test.

The less sensitive results in older children may be due to a more dense texture of skin and failure of absorption. The modified patch test overcomes this difficulty.

The modified patch test does not introduce any more pseudo-reactions than the patch.

Sepsis with the modified patch test is not likely if proper aseptic precautions are taken.

The modified patch test is quite easily and quickly performed.

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LL-Col. W. R. Martine, M.B.E., T.D., R.A.M.C., formerly senior assistant medical officer of health for Birmingham, has been promoted Colonel to command the 31st (Br.) General Hospital.

Medical Staffing of Public Health Services

A circular (No. 62/45, April 12th, 1945) addressed from the Ministry of Health to local health and hospital authorities bearing on Circular 2818 dated May 26th, 1943, states that a difficult situation has now developed in the staffing of the public health services of local authorities. During the past five years there have been heavy calls from the Armed Forces for medical personnel both for the care of our own Services and, in the last few months, for the reconstruction and reorganisation of the liberated territories; organisations such as U.N.R.R.A. have needed doctors; and there have been a number of deaths and retirements of public health medical officers. These losses have not been balanced by inflow of junior officers. Circular 62/45 continues:—

The Minister has carefully considered the matter in consultation with the Minister of Education and has decided that further steps must be taken to secure that the limited resources now available for the medical staffing of the public health services shall be used to the best possible advantage. This does not signify that any further reduction of such staffs as now remain is in contemplation, but, in future, permission to make such appointments to local authorities' medical staffs as defined in paragraph 3 of Circular 2818 can be granted only in exceptional circumstances.

The cases will fall into two categories—(a) proposals for a new appointment, i.e., an appointment additional to the establishment existing at February 28th, 1945, and (b) proposals for filling vacancies due to death, retirement, resignation or other reason. With regard to (a), all such proposals will be held over for review at intervals, when approval will be considered, within limits, in whichever cases the Minister judges to have the most pressing claims. If a medical officer returns from war service or otherwise to resume employment with an authority, this will rank as an addition to the staff, and as creating, possibly, a supernumerary. The Minister should be notified through his Senior Regional Officer of any such return of a medical officer.

Approval will not be given to proposals under 3 (a) and (b) until every effort has been made to arrange for the duties of proposed or vacant post to be otherwise carried on. The Minister will expect the authority concerned to consider the possibilities of (1) postponing the retirement of officers reaching normal age of retirement; (2) reorganising the duties of the remaining medical staff; (3) arrangements with a neighbouring authority for sharing the services of a medical officer or for the temporary secondment of such an officer; or (4) an increased use of the part-time services of private practitioners in the conduct of clinics, etc.

As it is essential that the very limited number of practitioners who are available to fill public health posts should be used to the best advantage and allocated where the needs are greatest, it has been decided that all medical officers (including temporary medical officers) as defined in paragraph 3 of Circular 2818, irrespective of sex, or nationality, who are in whole-time employment, must obtain the Minister's permission before applying for another post. The permission should be sought through the (principal) regional medical officer. If, without obtaining such permission, a medical officer applies for, and is selected for appointment, approval for this appointment under paragraph 2 (e) of Circular 2818 will not be given. The authority therefore should take immediate steps to bring this to the notice of every officer concerned, preferably by individual communication in writing. The requirement should also be made known to any individual doctor concerned who may later join the authority's staff in a whole-time capacity. If there is doubt whether a particular whole-time medical officer comes within the scope of the definition in paragraph 3 of Circular 2818 the (principal) regional medical officer will advise if desired. It should be noted that even where the Minister may give permission to advertise a vacancy or additional post he may have to refuse permission to apply to any intending applicant for the post, if, in his view, the applicant cannot be spared from his present employment. Local authorities should, therefore, allow sufficient time to elapse between the issue of an advertisement and the final date for receipt of applications in order that all requests for permission to apply

may be fully considered. It is suggested that any advertisement should make it clear that, for the present, the doctor selected for the advertised post will not be free to apply for another appointment without obtaining permission to do so from the Ministry of Health.

The Minister is not unmindful of the special claims that can be urged for certain services, e.g., tuberculosis and venereal diseases, and he recognises that the expedients which he is now compelled to advocate involve some sacrifice of the standard of efficiency which is secured in normal times. He feels confident, however, that local authorities will appreciate the exigencies of the present situation and will co-operate to the full in securing the most economical use of medical manpower.

On the occurrence of a vacancy or the submission of a proposal to establish an additional post, the Minister will carefully examine the possibilities mentioned in paragraph 4 above in consultation with his (principal) regional medical officer and, where necessary, the appropriate medical officer of the Ministry of Education. As stated in paragraph 5 of Circular 2818, all such proposals, including those concerning the school medical service, should be addressed in the first place to the senior regional officer, and they should be accompanied by a statement showing on what grounds it has been concluded that the need cannot be met by recourse to the expedients referred to above.

Penicillin for Civilians

The Minister of Health announced in March that increasing supplies of penicillin are now becoming available for the treatment of civilian patients. It has not yet been possible to place it on the market freely through commercial channels, and some degree of control in its use is still essential. Hitherto supplies for civilian patients have been distributed through the university medical schools and the teaching hospitals, but the Minister is anxious to relieve these bodies as far as possible of the detailed responsibility for control. It has been decided, therefore (a) to increase the number of distributing hospitals or centres; (b) to revise the "Recommendations of Conditions to be Treated." The distributing centres have been chosen, in consultation with the university medical schools, from among the hospitals, both voluntary and municipal, which have adequate laboratory facilities and have had experience in the use of penicillin, with regard to their geographical relation to the main centres of population.

For the present the issue of penicillin will be free of charge. While detailed returns of the types of cases treated will not be required, records of consumption and of distribution to other hospitals, etc., with receipts for quantities so supplied, should be kept and made available as required for inspection by an officer of the Department.

Erratum.—We much regret that, by an oversight, the tables below were omitted from the paper entitled *A Hundred Years of Public Health*, by Dr. T. A. Lloyd Davies, which appeared in the April issue.

TABLE I

Dwellings	No. of Families	Beds	No. of Families
Single rooms for each family...	920	One bed to each family ..	623
Two	408	Two	638
Three	94	Three	154
Four	17	Four	21
Five	8	Five	8
Six	4	Six	3
Seven	1	Seven	1
Eight	1	Dwellings without a bed ..	7
Not ascertained	3	Not ascertained	10
TOTAL	1,465	TOTAL	1,465

TABLE II

	Spitting of Blood	Catarrh	Other Diseases	Total	Percentage Proportion			Total
					Spitting of Blood	Catarrh	Other Diseases	
104 men having less than 500 cubic feet of air to breathe	13	13	18	44	12.50	12.5	17.31	42.31
115 men having from 500 to 600 cubic feet of air to breathe	5	4	23	32	4.35	3.48	20.00	27.82
101 men having more than 600 cubic feet of air to breathe	4	2	18	24	3.96	1.98	17.82	23.76

Each distributing centre would receive supplies of penicillin direct, and in turn would distribute an immediate supply to the hospitals in its neighbourhood which have laboratory facilities and experience in using penicillin. Other hospitals in the area would be entitled to receive penicillin on application for the treatment of suitable cases. Each distributing centre would further be authorised to issue penicillin to private practitioners for the treatment of suitable cases at home or in a nursing home. It is suggested that the distributing centre should form a small medical committee to be responsible for the further distribution and to give advice in doubtful cases.

It is suggested that an immediate issue of 2,000,000 units per month for every 100 beds for patients with acute diseases should be made. Supplies in excess of this amount will be available as required on application to the Department. It is understood, however, that the university medical schools have a substantial reserve of penicillin for civilian cases, and if a further supply is urgently required in emergency application should be made to the nearest university medical school. Present arrangements for the supply of penicillin for Service patients will continue.

Revised instructions on the indications for the use of penicillin have been issued. Syphilis and gonorrhoea have been transferred to the list of conditions which may be treated in suitable cases, and it is anticipated that increasing use will be made of the drug for these purposes. It is intended that the V.D. clinics attached to the several hospitals will have supplies allotted to them from the distributing centre.

Joint Tuberculosis Council

The Joint Tuberculosis Council, which met in London on February 17th, 1945, unanimously re-elected Dr. James Watt as Chairman, Drs. D. P. Sutherland and N. Tattersall as Vice-Chairmen, Dr. A. P. Ford as Hon. Treasurer, and Dr. Norman Eng'and as Hon. Secretary.

Ministry of Health Memorandum 146 T was further discussed, and the Council decided that certain matters in it which had been brought to their notice came within the province of the Society of Medical Officers of Health rather than of the Joint Tuberculosis Council. The correspondence (chiefly referring to the rates of payment for the examination of pension applicants by tuberculosis officers) was accordingly referred to the Society for consideration.

It was decided to ask the British Medical Association to receive a deputation representative of the Joint Tuberculosis Council and the Tuberculosis Association on the need for a national campaign for a safe milk supply. The National Association for Prevention of Tuberculosis were invited to join in the deputation.

Dr. G. Jessel reported that ten memoranda on tuberculosis subjects had been prepared, for publication for U.N.R.R.A. The memoranda would form a Manual for distribution to medical practitioners and others dealing with tuberculosis problems in occupied countries after liberation. One thousand copies of the manual would be distributed to tuberculosis workers in Britain by

TABLE III

Total Members	Sick during Year		Average Period of Sickness in Weeks	Average Payment to each Sick Person
	Members	Per cent.		
Tee-total	37	2	5.4	£ s. d.
Managers	47	5	10.6	1 10 0
Worthy	80	12	15	4 2 0
Rechabites	116	19	16.3	3 7 8
Odd Fellows	689	124	18	1 17 7
Female Rechabites	30	6	20	2 0 0
Forerasters	230	62	22.6	1 0 0
Ebenezer	111	28	25.2	2 11 0
Catholic Beneficent	167	51	30.6	3 7 6
Ditto, female	80	25	31.2	2 19 3
Perseverance	58	20	34.4	1 13 10
	1,646	344	20.9	2 7 11

the Ministry of Health. The subjects covered by the memoranda included administration, dispensary and sanatorium treatment, rehabilitation, bacteriological diagnosis, differential diagnosis, mass radiography, surgical treatment, non-pulmonary tuberculosis, and tuberculosis in childhood. Seven of the authors were members of the J.T.C.

Approval in principle was given to a proposal submitted by the Committee on Education (jointly set up with the N.A.P.T.) for the establishment of a Tuberculosis Educational Institute.

School Medical Service

The Minister of Education (Circular 29; March 12th, 1945) invites the attention of local education authorities to their duty, under Section 48 (3) of the Education Act, 1944, to secure that comprehensive facilities for free medical treatment other than domiciliary, are available for all pupils in attendance in schools or county colleges maintained by them. This Section of the Act must be considered in relation to the Government's declared intention to introduce a comprehensive health service as part of their reconstruction policy. When that time comes the functions of local education authorities will be to make sure that children can get all ordinary forms of medical and hospital care. While the war lasts, and probably for some little time thereafter, development of the School Medical Service will inevitably be restricted by the shortage of doctors, dentists, and nurses. The Minister believes, however, that authorities will welcome guidance as to steps which they should take, subject to these limitations, towards the fulfilment of their new duties.

Authorities should concentrate on improving and perfecting their existing schemes by providing that all the normal facilities of the School Medical Service shall be readily available for all pupils who need them, at no cost to the parent. This service at present covers treatment of minor ailments, diseases of the ear, nose and throat, and defective hearing, disease of the eye and defective vision, orthopaedic and dental treatment, child guidance, speech therapy and the treatment of rheumatism. With a view to securing the efficiency of this work it will be necessary for authorities to enter into arrangements with consultants—e.g., aurists, ophthalmic surgeons, dermatologists and specialists in children's diseases. The development of the service on the lines indicated may lead to the necessity of making increased provision for hospital treatment of certain of the conditions referred to. Authorities which have not already done so should make arrangements on terms to be agreed locally for the treatment of such conditions in children referred by them. Any arrangements at hospitals which have not hitherto undertaken the work for the authority should be submitted for the Minister's approval on the appropriate form, copies of which will be issued at an early date. The Minister will be prepared to consider proposals by authorities for the treatment at hospitals of school children suffering from other conditions, with the exception of those, such as tuberculosis and infectious diseases, for which local authorities already have statutory functions. Arrangements would have to be made with hospitals for the treatment, on terms to be agreed locally, of such other conditions as the authority may think fit. The arrangements proposed for this purpose which should be submitted to the Minister on the approved form would, of course, be confined to children referred to the hospital by the local education authority, or children for whose treatment the authority have accepted responsibility. In making arrangements with voluntary hospitals, authorities should have regard to the cost of the service (including reasonable remuneration for the visiting medical and surgical staff) and their payments should be related thereto, but the exact arrangements should be a matter for individual agreement between the authority and the hospital concerned. While the normal arrangement may be for payment on a case basis, it may sometimes be found convenient, both to hospitals and local education authorities, for a comprehensive quarterly or annual payment to be made to a particular hospital or group of hospitals to cover the treatment of all conditions in school children for which the authority have accepted responsibility and the hospitals are able to provide. Every effort should be made to improve the provision for children attending schools in rural areas. It is suggested that authorities might, where necessary,

arrange with local general practitioners for the treatment of pupils referred to them by their medical officers or nurses. Such treatment might be given in either the schools or other suitable places or in the doctor's own surgery. Payment for the treatment should be agreed between the authority and the practitioner.

The existing School Dental Service should be maintained on its present lines and should of course be expanded as soon as additional dentists become available. Provision should, however, also be made by authorities in areas where clinic facilities are not readily available for the emergency treatment of school children on the lines of arrangements that have been in force during the war for evacuated children. The authority should accordingly enter into agreement with private dental practitioners for such treatment to be given by them at their surgeries to any pupils attending maintained schools who may be referred to them by the authority's medical officers, nurses, or teachers. Under such arrangements the authority would assume financial responsibility for payment of fees on the scale fixed for dental benefit under N.H.I.

These suggestions are made with a view to purely interim arrangements and without prejudice to any ultimate decision which may be reached in regard to the National Health Service.

BOOK REVIEW

Social Aspects of Tuberculosis. By S. ROODHOUSE GLOYNE, M.D. 1944. London: Faber & Faber. Pp. 148. Price 8s. 6d.

Dr. Gloyne explains in the preface that this book is the outcome of lectures to health visitor students. It deals, therefore, with those aspects of tuberculosis which most closely concern the health visitor, but its value will be appreciated by a much wider circle. To the clinician whose attention is fixed largely on the problems of individual patients, it is a useful summary of the other facets of the disease, and it is so written that the layman may realise the vast social problems created by tuberculosis.

A brief historical survey is followed by an excellent chapter on the tubercle bacillus. Chapters 3 to 12 give an account of the effects on civilised and primitive communities of tuberculosis and of their effects on the disease. The next three chapters describe the modern methods of attacking the tuberculosis menace, and the last chapter is a recapitulation of the main features of the book. There is a good bibliography for readers desiring more knowledge of this important subject.

Life Blood, "the official account of the transfusion services," has recently been published for the Ministry of Health, and the Department of Health for Scotland, by the Ministry of Information, and is obtainable from H.M.S.O. at the price of 6d. It is illustrated, and follows closely the style of other pamphlets published by the M.O.I. on various aspects of the war, and in 32 pages gives the general reader a graphic picture of the work and problems of a transfusion unit.

OBITUARY

W. H. LAMPLOUGH, M.D., D.P.H.

We regret to record the death on March 4th of Dr. W. H. Lamplough, late M.O.H. and School Medical Officer for Gosport. Wharram Henry Lamplough was born in 1878, and attended Bedford Grammar School. He received his medical education at St. Bartholomew's Hospital, and at Newcastle-upon-Tyne, taking the conjoint diplomas and the M.B., B.S. of Durham University in 1903, proceeding to the M.D. and D.P.H. four years later. After house appointments at the Royal Hants County Hospital and the London Temperance Hospital, he set up in general practice with his elder brother, Dr. Charles Lamplough, in Gosport and Alverstoke. He became police surgeon for the district, joint medical officer to the post office, and M.O.H. and school medical officer for Gosport. During the war, 1914-18, he was a temporary lieutenant, R.A.M.C. In 1923, he was appointed honorary medical officer, Gosport War Memorial Hospital, and medical superintendent to the Isolation Hospital, Elson. Dr. W. H. Lamplough was for many years a member of the Hants County Panel Committee. A man of excellent physique, he won the Hants golf championship in 1912, and was also a formidable lawn tennis and badminton player.

SOCIETY OF MEDICAL OFFICERS OF HEALTH GENERAL PURPOSES COMMITTEE

A meeting of the above Committee was held at Tavistock House, Tavistock Square, London, W.C.1, on Friday, March 2nd, 1945, with Dr. J. M. Gibson in the chair.

There were also present Drs. Cyril Banks, N. D. Begg, G. F. Buchan, J. J. Buchan, W. A. Bullough, Jas. Fenton, C. Herrington, R. H. H. Jolly, A. A. E. Newth, Prof. R. M. F. Picken, Drs. Virginia Saunders-Jacobs, H. C. Maurice Williams and F. T. H. Wood.

Apologies for absence were received from Drs. G. Lissant Cox, W. M. Frazer, J. W. Hunter, Hugh Paul and J. Greenwood Wilson.

The minutes of the meeting held on December 12th, 1944, were approved and signed.

Health Visitors and Dentistry.—A resolution was submitted by the Dental Officers' Group urging that as health visitors had exceptional opportunities of influencing parents and other citizens on health matters, their course of training should include some instruction in dentistry. Agreement was expressed with the Group's recommendation, which it was thought would be met by the provision for lectures and demonstrations in medical and dental subjects included in the syllabus for public health nurses commended by the Council of the Society in November last for consideration by the Ministry of Health.

Section 48(3), Education Act, 1944.—The President reported that owing to the short time available for the drafting of explanatory circulars in reference to the Education Act, 1944, the School Medical Officers' Group of the Society had been asked to confer with officers of the Ministry of Education without the customary previous consultation with the Council of the Society. In the circumstances the President approved the conference on the understanding that, as no meeting of the Council would be held during March, any agreements proposed by the Group should be reported to the General Purposes Committee on March 2nd. Dr. Newth accordingly submitted a memorandum of the points discussed with the representatives of the Ministry, and it was agreed that the Society's approval of the Draft Circular as amended by the Conference should be reported to the Ministry.

War-time Nurseries.—A memorandum was received from the London Women's Parliament urging the continuance of day nurseries for the service of mothers in employment after the war.

Colonies for Neurotics.—Proposals were reported by the Royal Medical and Psychological Association for the provision of colonies for the long-term and short-term treatment of neurotics.

Ministry of Health Memo. 146/T, 1944.—Representations were received from the Tuberculosis Group in reference to the terms of this memorandum. It was agreed to refer the matter of fees to the British Medical Association, for such action as they thought advisable.

Adoption of Children (Regulations) Act, 1939.—Correspondence in this connection from Dr. J. E. Spence and the Maternity and Child Welfare and School Medical Service Groups was deferred for further consideration at the next meeting of the Committee.

Ministry of Health: Revision of Circular 2818.—A letter from the Ministry of Health reported that in view of urgent calls for medical personnel for the Forces at home and abroad, and for the immediate needs of occupied countries, further restrictions would be necessary before approval of new appointments to the medical staffs of local authorities. The draft circular enclosed for the information of the Society was accepted as a regrettable necessity, and it was agreed that the Ministry be informed that the further restrictions must make it difficult to maintain the existing health services and postpone the provision of other services which had been commended by the Ministry to local authorities for early adoption. For these reasons the Committee welcomed the assurance of the Minister that all restrictions on the staffing of health departments would be relaxed as soon as circumstances permit.

Employment of Married Women.—Further consideration was given to correspondence from Dr. Jane O. Millar and the School Medical Service Group in reference to the compulsory retirement of medical women employed by central and local health departments. It was agreed to await a delayed report from the M. & C.W. Group which would be available at the next meeting of the Committee.

Salaries Committee.—An interim report from the Salaries Committee was discussed at length and referred back for various adjustments. It was agreed that after their meeting to be held during March the Salaries Committee should circulate their amended report direct to Branches and Groups with a request for any further observations which should be submitted with an early report to the Council.

Compensation for Disability Resulting from Employment.—It was agreed to consult with the B.M.A. and N.A.L.G.O. on the following resolution from the Yorkshire Branch, viz.:—

"That the Council of the Society be asked for a legal opinion upon the position of a medical officer, or of a nurse, who contracts an illness attributable to employment, and suffers permanent disability therefrom.

"Further, that if compensation in such circumstances is either arbitrary, or dependent upon a verdict obtained through the Law Courts, an effort should be made to secure some measure of protection, similar to that granted to members of the Police Force under the Police Regulations.

The G.N.C. and the Tuberculosis Certificate. It was agreed to commend to the Ministry of Health a resolution of the Yorkshire Branch: "That the refusal of the General Nursing Council to recognise the Tuberculosis Certificate as a qualification for inclusion on the Register is a handicap to the efficiency of the tuberculosis service."

Reconstitution of the Society. It was agreed that the Chairman should report to the Council of the Society the desire of the Committee for amendment of the Society's By-law No. 1 to permit re-election of any member as chairman of Council for a period not exceeding three years. The meeting then adjourned.

MIDLAND BRANCH

President: Dr. H. B. Binks (M.O.H., Stafford)

Hon. Secretary: Dr. H. Paul (M.O.H., Smethwick).

The fourth meeting of the session was held in Birmingham on February 1st, 1945.

The President, 24 members and two visitors were present. The minutes of meetings held on December 2nd, 1944, and January 13th, 1945, were read, confirmed and signed by the President.

A discussion on premature infants was opened by Dr. Jean Mackintosh and Dr. Mary Crosse. Dr. Mackintosh dealt with the administrative and statistical aspects of the problem, and after saying that 41% of all stillbirths and 58% of all neo-natal deaths occurred in premature babies, suggested that the minimum requirements for the handling of the problem were one ante-natal bed for each three maternity beds where provision was made for 80% of all births, but this number should be increased where only 50% of the births were received in hospital. All babies under 5 lb. should be in hospital. She thought two cots for premature infants per 1,000 births was the absolute minimum to be provided in a maternity hospital, but three cots were desirable, and four would probably be adequate to deal with all cases.

Dr. Mary Crosse dealt with the actual care of the premature child in an institution. She outlined the factors influencing the prognosis, such as the giving of vitamin K to the mothers, the avoidance of uterine stimulants, anaesthetics, and most sedatives. She did not advocate very hot rooms, 70° for the hot room and 60 to 65° F. for the cold room being adequate. The humidity should be 65%. She preferred individual cubicles for each child, and said that the maximum number one trained nurse could look after was four, or if all were over 5 lb., six. She prescribed a minimum of 50 square feet of floor space per cot, and called for facilities for breast feeding by the mothers, for education, for isolation, and for food preparation. For children treated at home, she urged (1) maintenance of body heat, (2) maintenance of respiration, (3) protection from infection (no visitors), (4) careful feeding, (5) early recognition of complications. The baby should be laid on the right side for feeding, not on its back. As the baby had no cough reflex, it was essential that, if it was necessary to do anything for the baby, it should be done before feeding and not afterwards. Otherwise there was a risk of regurgitation.

The Ministry of Labour and National Service has issued a pamphlet which contains a preliminary draft of a new code of Building (Safety, Health and Welfare) Regulations under the Factories Act, 1937. The pamphlet takes into account (1) development in methods of building construction since 1926 and accident experience since that date; (2) the International Labour Convention and Recommendations of 1937; and (3) the greatly extended scope of the Factory Acts effected by the Act of 1937. This preliminary draft is published for study and consideration, and it is proposed that after two or three months there should be conferences with the Ministry to discuss points raised, before the Regulations—revised in the light of such discussions—are formally issued in draft. Copies of the pamphlet can be obtained from H.M.S.O., price 6d.

Subscription 31s. 6d. per annum, post free, in advance.
Single copies 2s. 6d. post free.

"Public Health" is the Official Organ of the Society of Medical Officers of Health and a suitable medium for the advertisement of official appointments vacant in the health service. Space is also available for a certain number of approved commercial advertisements. Application should be made to the Executive Secretary of the Society, at Tavistock House South, Tavistock Square, W.C.1. Telephone: Euston 3923. Telegrams: Epidaurus, Westcent.

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EDITORIAL

Physical Education

On July 13th, 1943, at a meeting held at the Royal Institute of Great Britain, the Research Board for the Correlation of Medical Science and Physical Education came into being; and towards the end of last year a "three-part interim Report" was issued (published from Hamilton House, Bidborough Street, London, W.C.1). The Chairman of the Board is Brigadier Frank Howitt, and at the first meeting its aims were outlined as follows: (1) to ensure more general recognition of the need for health and physical education in the widest sense; (2) to achieve more general co-ordination between authoritative groups dealing with various aspects of the subject; and (3) to pool the experience of national groups so that it may be of use to all. The problems to be investigated were divided into four sections: maternity and child welfare, under the chairmanship of Mr. Victor Lack; education and recreation, under the chairmanship of Mr. H. M. Walton; the Services, under the chairmanship of Surgeon-Captain Digby Bell; and industry, under the chairmanship of Brigadier F. A. E. Crew. A scientific advisory sub-committee under the chairmanship of Sir Farquhar Buzzard, with Professor Lancelot Hogben as assessor, was also created, to suggest lines of research which the subcommittees might undertake.

The interim report gives a general picture of the health of the country at the present time, and includes recommendations for the future. It is emphasised, however, that the report is in the nature of a preliminary technical survey. Discussion on questions involving scientific research have been deferred until the results of such research are available. For example, there has been much discussion on problems such as rest, length of journeys to school, and types of clothing and footwear for children of different ages. Among the intentional omissions is correlation of medical scientific physical education in special and approved schools. It was realised that only by team work between the medical and educational professions would the most valuable practicable conclusions be reached. Many recommendations in the report have been made before—for instance, by the British Medical Association Physical Education Committee's report of 1936, and by the report of the National Union of Students of 1938. Brigadier Frank Howitt, in his preface, expresses the hope that repetition of these recommendations may help to bring them into effect, and adds "in that event, any reinforcement we may have been able to give will not have been in vain."

Turning to the chapter on the Services, we read: "The physical condition of recruits leaves much to be desired. This may be due to various causes, e.g., malnutrition, bad social conditions of environment, or inadequate physical education prior to recruitment." Improvement in this state of affairs, as is pointed out in the preface, is dependent on the intro-

duction of social security reforms. The report, recognising that the physical welfare of the adult population must be built up even before birth, begins with a survey of maternity and child welfare. It is recommended that the effects of work on the health of the mother, both during pregnancy and after the birth of the child, should be more fully investigated, that the use of ante- and post-natal exercises should be extended, and that the provision of milk and other essential children's foods should be continued after the war. In the following chapters there is a survey of education and recreation in nursery, primary and secondary schools; and in universities, training colleges, polytechnics, etc. There is a section on the Services, and on rehabilitation of the sick and injured. At the end of the book the recommendations of all the sub-committees are collected together, so that they may be referred to easily. The book should be in the hands of all those interested in physical education and in planning for the nation's future physical welfare.

A National Conference on Maternity and Child Welfare, arranged by the National Association of M. and C.W. Centres on behalf of the National Council for M. and C.W., will be held in the Big Hall, Friends House, Euston Road, London, N.W.1, on Thursday and Friday, June 28th and 29th. Tickets, 3s. each for one day or 5s. each for two days, may be obtained from Miss M. R. Lovelock, 117, Piccadilly, London, W.1. Dr. Jane Turnbull will open the conference at 10.30 a.m. on June 28th, and the morning session will be devoted to nutrition. The Chairman will be Prof. J. R. Marrack, and the speakers Dr. S. J. Cowell, Dr. Margaret Wright, and Miss R. M. Simmonds, s.r.n. In the afternoon there will be films, and a talk by Dr. Robert Sutherland on films in health education. At 10.30 a.m. on June 29th Mr. Willink will deliver his Presidential Address to the Association of M. and C.W. The importance of maintaining the unity of the maternity and child welfare services will be discussed under the Chairmanship of Dr. J. M. Mackintosh, the speakers being Dr. Nora Wattie, Miss G. L. Reed, Matron of St. Mary's Hospitals for Women and Children, Manchester, and Dr. Alan Moncrieff. In the afternoon His Grace the Archbishop of Westminster will speak on the State and the parent in relation to the child. The other speakers will be Dr. Leslie Housden and Dr. Grantley Dick Read, and the Chairman will be the Rt. Hon. Margaret Bondfield. The conference is open to all interested in maternity and child welfare. There will be exhibits arranged by the National Baby Welfare Council, the Nursery School Association of Great Britain, and other bodies. Owing to catering difficulties, people are advised to bring their lunch. Delegates who would like to lunch at Friends House should send their names to Miss Lovelock, who will deal with applications in rotation.

The Maternity and Child Welfare Group of the Society of Medical Officers of Health have arranged a post-graduate course on Saturday, June 30th. All doctors who have a ticket for the Conference are invited. Particulars and admission ticket can be obtained from Dr. Miriam Florentin, Town Hall, Church Street, Stoke Newington, London, N.16.

SCHOOL MEDICINE AND SOCIAL MEDICINE THE NEW OUTLOOK*

By JOHN D. KERSHAW, M.D., D.P.H.,

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Members of the School Medical Service have been quick to realise that health means infinitely more than medicine. It is because we, as a service, have always sought the optimum rather than the average, and because we have made good use of our opportunities to venture outside the peculiarly medical sphere, that we have a specially important position in relation to medicine as a whole at the present time; it is our duty to take advantage of that position.

I like to define social medicine as "the development of medicine in relation to social life and the influencing of social life and organisation in the interests of human well-being." Is there any branch of medicine to which such a definition might apply as aptly as it does to school medicine? Have we not developed our branch of medicine in relation to a certain section of social life, and have we not exercised on school life an influence which has been in the interests of human well-being? It is because we have already ventured so far into social medicine that we have good reason to venture farther, and I would suggest that we first survey the general relation of education and the school to society as a whole.

The Immature Human

The period of immaturity of the human young is, if we consider only physical biology, the longest in the animal kingdom, lasting for at least 15 or 16 years. In choosing to live in association with his fellows, man has, however, artificially prolonged this period of immaturity and complicated the whole problem of development. A primitive, unsocial animal, and even primitive unsocial man, is mature when his intelligence, his bones, and his muscles have reached full growth and his organs of reproduction have become active, but physique and virility, even when accompanied by the intelligence of a 14-year-old child, are a grossly inadequate equipment for twentieth-century civilised life.

The individual in society has entered into a contract with his fellows by which he undertakes to perform useful work; and, in return, he will share in the products of the useful work of his fellows. Part of the contract is that the individual shall be protected during the period of immaturity and shall be trained in the performance of useful work, but he is not allowed a full and responsible place in society until he has shown himself to be capable of accepting the normal burdens of maturity. The needs of society require that to strength and intelligence there shall be added skill in their use and general and specialised knowledge.

At maturity, the individual must be educated for work, for living, for the right use of leisure, and for citizenship. His health, mental or physical, depends upon all these. Ill-health dogs the man who is a square peg in a round hole, his body fails under the strain of work for which it is inappropriate, and his mind seeks, in psychological aberration and psycho-neurosis, escape from the tasks with which it cannot cope. We know how a faulty technique of living expresses itself in ill-health, and how leisure and recreation, the great restorers, can be converted by abuse into instruments of destruction for both body and mind. We know how a community so often lacks the wit and wisdom to make use of the powers for good which it possesses, making health one of the last instead of one of the first of its aims.

If, then, we are prepared to call ourselves practitioners of social medicine, we must urgently seek a remedy for these ills. We must accept education as one of the most important sides of the therapeutics of social medicine, and must no longer pretend that it is none of our business. It is not our task to

turn ourselves into inferior teachers. If we tried we should fail as lamentably as if we ventured suddenly into practical physiotherapy or some other medical speciality. The teacher will still be the best person to teach, but because his ultimate aim is the same as ours—health—we have both the right and the duty to criticise and comment upon the methods and techniques of education.

Vocational Guidance

We hesitate to interfere with the individual's free choice of occupation, because we know that a man works best and most harmoniously in an occupation he likes. But if we look a little deeper we shall find, not that a man is efficient because he likes his job, but that he likes his job because it is one for which he is physically and mentally suited; and, conversely, that a man is always unhappy in work which is beyond or outside his powers. Moreover, this theoretical right of the individual to choose work which he likes is in practice almost non-existent. The assumption is that everyone has the opportunity to try many different occupations until he finds one which suits him. What actually happens, however, is that for most occupations in an industrial country specialised preparatory training is so long that, when a man has completed it and is at last entitled to a man's status and wage, he is reluctant to make any radical change in occupation, since this would involve writing off as wasted the years of apprenticeship and a return to immaturity, with the postponement for several years of marriage and the founding of a family. If, therefore, the individual has chosen a type of skilled occupation which does not suit him, his practical choice is between making the best of a bad job or falling into unskilled or semi-skilled labour which does not require so long a period of practical training.

Though the initial choice of work is so largely irrevocable, we have troubled little about guiding the individual in the making of it. Our examination system has made possible one very broad division—that between the intelligent scholar, whom it segregates into a group of individuals who will later take up sedentary work, and the less intelligent young person (or the less scholarly one), who is grouped with the manual workers. Perhaps this division is on the whole successful, but it still has numerous failures which are the not unnatural consequence of its being based on the arbitrary assumption that examination successes or failures at the age of eleven are in any real sense an index to the future development of ability or character. Even if such a division were assumed to have a rudimentary practical value, this might be nullified by the way in which the final choice of an occupation is determined: the desire to follow in the father's footsteps, and the accidental occurrence of a particular vacancy at the time when the adolescent is seeking his first job, account for by far the greater part of choices of work for life.

Detecting Aptitude

Our problem is to detect aptitudes in the child at the earliest possible age, to discover which occupation the child's aptitudes best fit him for, to devote some part of his education to the development of those aptitudes, and then to find for him a vacancy in the appropriate occupation. Like most social problems, it is more easily expressed than solved, but it is by no means impossible to suggest the lines on which we might attempt a solution. We may begin, even with nothing better than our present knowledge to guide us, by ascertaining the more obvious physical contra-indications. A child with generally poor physique or with some irremediable physical weakness would be unsuitable for work which involved the lifting and carrying of heavy articles. At present our function in these cases is limited to notifying the local office of the Ministry of Labour that a child is unfit for this or that general group of occupations. In some of these cases we know or suspect the nature and extent of the child's disability years before he leaves school. We could, therefore, if we had the knowledge and the facilities, decide not only what that child ought *not* to do, but what he could and should do; and his whole education in those last few years could be directed toward the educa-

tion and development of the powers which he possesses. Is it too much to say that the child with a congenital lesion of the heart has more social right to a sedentary job than the child who merely wins a secondary school scholarship?

Our next step must be the psycho-physical study of industrial work. An occupation involving much physical activity can be satisfactorily performed by individuals who vary widely in physique. Apart from the acquisition of special skills, the "wiry" person can sometimes outdo a bigger person in the exercise of effective strength. We may be nearer the solution of this and kindred problems than we think. Our search for criteria of nutrition has led us into strange by-ways. The factor possessed by the "wiry" person may be one of the things which we measure with our dynamometers, and our "hanging bar" tests may give us information about perseverance, endurance, the value of incentive, and the presence of that complex characteristic for which we can find no better word than "guts."

How much do these qualities matter? How far do they enter into industrial and other work? How far can they be consciously developed and trained? If these are not questions for medical research, I misjudge medicine sadly. We can add others to the list. What is the importance in a particular occupation of weight and height? Is vital capacity related to efficiency in particular types of work? How far do certain occupations demand acuity or the reverse in the special senses? It is too much to expect to answer these questions accurately in a reasonable time. We could, however, reasonably expect to draw up fairly quickly a broad scheme of physical and psychological indications and contra-indications, and to effect some classification or grouping of occupations which would avoid gross incompatibilities and yet allow the individual some choice within the group.

Notwithstanding the claims of the psychologists for the accuracy of "aptitude tests," it is only the more general of such tests which are really reliable. The best way to find whether a child has an aptitude for some particular thing is to let him try it and see what happens. Different aptitudes will become manifest at different ages and different stages. While the child with an "artistic" bent will be discovered young, we cannot expect to find and assess an aptitude for the study of foreign languages until a child has reached the post-primary stage and is beginning the study of languages. Early prowess in arithmetic may give something of a clue to later mathematical ability; but aptitude in the use of the written or spoken word cannot show itself until the child has acquired an adequate vocabulary, possibly not until he has reached his "teens." We are, therefore, faced with two requirements in direct opposition to one another. In modern society, the earlier the individual can begin to specialise the more efficient he is likely to be in his speciality. It is, however, important that specialisation should be deferred until the individual's aptitudes can be assessed.

Our obvious first step is to extend those psychological and psychiatric services which at present we know chiefly in the form of child guidance. Child guidance is to the mind what orthopaedic surgery is to the body; we need to take in the psychological sphere the step which we have already taken in the physical, and introduce a psychological service which corresponds to physical education in the best and fullest sense of that term. Just as physical education begins with the class teacher, so the class teacher, suitably trained and equipped, will have to be our first-line field worker in the new psychological service. But he will essentially be one of a team. The psychiatric social worker, at present working with children only after their maladjustments have become established, will have a new function in the linking of the school with the wider social environment of the normal as well as the abnormal child. The educational psychologist, whose training and experience are not infrequently misused by his assignment to diagnostic work in mental deficiency, will do in the schools themselves the constructive work for which he is eager and ready. We may thus hope to have something of the nature of a complete current record of both the physical and the psychological development of every child.

The Educational System

Our next duty is to exert some influence on the educational system to ensure that this constructive psychological service is not wasted. We can suggest a reasonable compromise between the need for early specialisation and the desirability of delaying specialisation. It can be found in a development of the "multilateral" arrangement of our bigger secondary and "public" schools, combined with some radical change in the examination system.

We must realise that the whole of our educational system is, in practice, cramped within boundaries laid down by an examination system which is entirely unrelated to the practical or even the academic needs of the great majority of children. Oxford and Cambridge, as our two oldest universities, developed a tradition which required a certain standard of attainment in the students entering them. The new universities self-consciously modelled themselves upon the old, and our secondary and public schools were compelled to make the matriculation examination the focal point of their education. Their head-masters, knowing that the success of their schools would be largely judged by examination results, were obliged to demand of their entrants a standard of basic education sufficient for later matriculation. The junior school headmaster similarly demanded of the infant school headmistress that children entering his school at the age of seven should be ready to begin a four-year course of education up to secondary school entrance standards. We have, in short, standardised a scheme of education for all children by reference to the needs of that minute fraction of the population which is likely to enter a university. I need not dwell on the more spectacular atrocities which result: the apparently "bright" child groomed for scholarships irrespective of his aptitudes, and the academically dull child left to rust; the psychological trauma which results in the sensitive child from the continued apprehension of examinations; the premium placed upon facts which can be reproduced in an examination as against the training of the mind in the exercise of its proper function—thought.

A solution need not be hard to find. Since no one enters a university before the age of 18, let our university entrance examination be taken at that age. If we must have a school-leaving certificate let us have one with, say, four compulsory general subjects common to all schools and sides and one subject of a moderately specialised character (e.g., general science, including both physics and chemistry), so that the candidate will not need to commit himself irrevocably to a particular type of specialisation at the age of 11 or 12. This done, we can arrange that in any given area all the post-primary schools shall stand in the same relation to one another as do the sides of a single school, so that there is a possibility of transfer from one to another at any age between, say, 11 and 14 without detriment to the child's future, if the provisional assessment of his abilities and aptitudes at an earlier age proves incorrect. Further, since the large size of our present classes makes in itself for rigidity of the system, we have much to gain by reducing class sizes at the earliest opportunity.

Leisure

I have given prominence to this question of occupational training and adjustment because it is a fundamental condition of social life that the individual shall perform useful work; upon the efficiency or otherwise of that work depends the whole of the social welfare of both the individual and his dependants. It is not, however, enough that a man should be efficiently employed in suitable work. For two-thirds or more of his day his life is his own, to use or abuse as he will.

The first business of life is to live, and the complex organisation of society has made living anything but a simple matter. In the more civilised countries it involves the wise expenditure of a fixed and limited sum of money in the provision of food, clothing, shelter, and recreation for the family, the making of provision for the future through savings and insurance, and the practice of certain skilled domestic occupations. Any major errors in this process will certainly affect health adversely, and even minor errors have a habit of bringing unpleasant consequences out of all proportion to the original fault.

* Presidential Address delivered to the School Medical Service Group of the Society on February 9th.

Formal education has lamentably failed to make the average individual live well or even intelligently. This is not unexpected, since what we commonly interpret as "education for living" comprises occasional, irregular, and inexpert "health lessons," two or three hours a week of "domestic science" for girls, and some teaching of art and literature which is either perfunctory or so minutely analytical as to destroy both the life of the subject and the interest of the pupil.

On the other side, the forces of the devil are not only strong, but are cleverly led. In the first place, every healthy habit involves some positive effort; it is only bad habits which come naturally to mankind. In the second place, the predatory principle which underlies so much of social activity allows infinite scope to mis-education. How, for example, can the dim memory of one or two lessons, years ago, on the making of healthy, inexpensive oatmeal porridge hope to stand up to the advertisements of expensive and useless proprietary breakfast cereals? A close second to poverty as a cause of malnutrition comes bad catering with its twin, bad cooking. There is also an appalling ignorance about the use and abuse of clothing. And no one who lives in a town which has libraries and cinemas can fail to realise that the popular form of recreation is indulgence in intellectual opiates.

Elementary biology and human physiology should be included in the curriculum of both primary and post-primary schools. In addition to health education as a special subject, health education in a general form should permeate all teaching—an aim which is far more practicable than might at first be apparent. Domestic science training could and should take a far more concrete and practical form—every senior girl should spend a period in a residential housewifery centre, learning not only how to cook but how to cater and how to manage a house, a thing she could never learn in her ordinary school. It would be all to the good if education lost some of its traditional academic qualities and became more closely related to practical matters. Arithmetic lends itself particularly to a "functional" method of teaching, by which the problems in the textbook are the problems which are met in ordinary life, but other subjects would gain not only value in the future but interest at the time if they were connected with out-of-school life.

We can observe two simultaneous tendencies in social development. By one, complex work is being broken down into simpler and simpler processes, so that those engaged in that work use less and less of their intelligence, their strength, and their skill. The consequence must be either a rusting and atrophy of those powers, or frustration—that most dangerous of all the mind-disturbing forces. By the other tendency, the amount of leisure available to the individual is steadily increasing. Therefore it is important that we should occupy a considerable part of our increasing leisure in finding an outlet for those unexpended mental and bodily energies. This question of self-expression is one which each individual will finally solve in his own way. As in the selection of occupations, however, aptitudes for self-expression are quite likely to show themselves during school life, and it is then that it is easiest to give those aptitudes and abilities a constructive direction. To bring this about we must inculcate a new attitude towards school clubs and societies. Enlightenment in this respect has spread considerably during the past 20 or 25 years, but there is still an idea that these clubs are good only in so far as they keep the child out of mischief, and that they must not be allowed to compete with academic work. The debating society, the dramatic society, the musical society, and the hobbies clubs are complementary rather than antagonistic to real education.

I look forward to a time when the school will be the focus of a great deal of community activity in these and similar matters. We are all, now, thinking in terms of health centres which will be not communal surgeries but genuine centres of healthy social activity; to the time when instead of the familiar 8-ounce bottle of nothing in particular the doctor will be able to prescribe a season of swimming or a term of amateur acting. I am attracted by the "School Base" idea, which suggests, in effect, that the cultural activities of the schools of a neighbourhood should be centralised in a part of the

community centre of that neighbourhood, so that the cultural leaders in the schools could also be the cultural leaders out of school, and so that the cultural activities of the school should not be isolated from community life.

The State of Society

I have talked much about the need for fitting the individual to the society of which he is a member. This is necessary in view of the fact that the general shape of society is predetermined by its development. At the same time we have to remember that society is the aggregation of individuals, and that the individual possesses, in theory, the power to influence society. When we speak of a sick society we really mean, though we do not always appreciate the fact, that the members of that society are, by reason of their own sickness or incapacity, unable to exercise intelligent control over their own activities. The blame for such a state of affairs must necessarily fall upon our educational system, since education is the only means by which we attempt consciously and deliberately to train youth for the responsibilities of maturity. Because of our training and our work we have special opportunities for seeing the blunders of society. What M.O.H. has not condemned the law which, while giving him certain powers in respect of milk production and control, has hedged those powers with restrictions in the farmer's interests? Why does our British housing policy, even in peace-time, limp forward where it should stride boldly? Why are local authorities so hard to convince that the spending of public money on provision for health is the wisest of all expenditures?

It is an axiom that the laws and the declared policy of any community cannot run materially in advance of the general opinion of that community. We fall short of the ideal in our health policy and legislation because the individual members of our community lack the knowledge, the wisdom and the purpose which are necessary for the proper safeguarding of their interests.

Man still needs material food, clothing, and shelter; there is little profit in caring for the soul if we allow the material body which it inhabits to perish and decay. At the same time, there is everything to be gained by setting the material side of life in its proper perspective. Education is based far too much upon personal acquisitiveness and competition, so that it is not easy for the child who has passed through the educational mill to shed these principles in later life. The competitive spirit is by no means wholly bad, but it is one of the worst possible preparations for social life for a child to have to worry about his "marks" and his place in class. We must treat the school as more of a community and less of a scrambling-ground for individuals, stressing all the time the value of the co-operative class or group project. We must restore some of the better features of the public schools which existed when their scholars, assured from birth of freedom from economic competition, could afford to learn to be gentlemen. We must, in fact, regard the school as a microcosm of the world outside, in which the child learns to deal with the problems of life in society so that he enters that outer world not only with a store of book-learning but with a sound philosophy of life and some knowledge of how that philosophy should be applied to the business of living.

All this is a long way from school medicine as we have generally known and practised it. But anything which directly or indirectly influences health and well-being is the doctor's business; and we, as the doctors most closely concerned with the educational system, have the right and the duty to look into that system and see how it might be influenced in a healthy direction. Nothing I have written is so revolutionary that there are not already many teachers and educationists already practising it or pressing for its practice. Our task, individually and collectively, is to keep in touch with the progressive elements in education and to give them that support and help which they need. It is not the habit of school medical officers to reject the new merely because it is new; rather is it our custom to give it a sympathetic trial. If only we can bring to education something of this same open-mindedness and scientific spirit we shall do no small service to social medicine.

THE FATE OF PRÉMATURE BABIES IN WARWICKSHIRE, 1944

By FRASER BROCKINGTON, M.D., D.P.H.,
County Medical Officer, Warwickshire

The attached tables show the fate of premature babies in the administrative County of Warwick* (total births 9,491). The births have been arranged in half-pound weight groups; babies considered clinically by the midwife to be premature but exceeding 5½ lb. have been excluded. The 334 premature babies included 69 twins (21%).† There were also 46 still-born premature babies, constituting 46 to 175 (i.e., 26.3%) of the total stillbirths. The rate of live premature babies per total live births was 3.5. The overall survival rate was 77.6%, a little higher than 1943 (75.4%) and 1942 (71.8%).‡ Survival is closely related to birth-weight, and the rate remained high down to a weight of 3½ or 3 lb. when there was a sharp drop. A high proportion (40 to 75 = 53.4%) died within 24 hours, and 67 to 75 (89.4%) in the first week.

TOTAL BIRTHS, 9,491

TABLE I.—PRÉMATURE BIRTHS IN WARWICKSHIRE, 1944
NUMBER PRÉMATURE, 334 LIVE BIRTHS, 46 BORN DEAD

PERCENTAGE, 3.5 (LIVE BIRTHS)

Weight Group lb.	Number of premature births							Number dying (days)													Total	Per- cent- age sur- vival																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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	A1	A2	A3	B1	B2	C1	C2		Total	1	2	3	4	5	6	7	8	9	10	11				12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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A1—Attended by an independent midwife
A2—Attended by a county council midwife
A3—Attended by a district nursing association midwife

B1—Born in a nursing home
B2—Born in a maternity home
C1—Born in a municipal hospital
C2—Born in a voluntary hospital

The proportion of complicated deliveries in the four groups was (a) Municipal Hospitals, 41.5%; (b) Voluntary Hospitals, 37.0%; (c) Maternity and Nursing Homes, 6.4%; (d) Domiciliary Practice, 13.4%. The survival of complicated cases was 65 to 92 = 71%.

Age of the Mother.—The average age of mothers was 29.4 (S.D. 6.5) and in successive weight groups 5 to 5½, 28; 4½ to 5, 29; 4 to 4½, 33; 3½ to 4, 31; 3 to 3½, 29; 2½ to 3, 29; 2 to 2½, 29; under 2, 30. There was no difference between the average ages of patients delivered in the four groups: (a) 28.4, (b) 29.9, (c) 30.0, (d) 29.4.

Relationship of Sex.—Males to females born were 160 to 174. Males to females dying were 50 to 25.

Discussion

The incidence of 3.5% of live births is much the same as in the two previous years (3.0 and 3.8). The presence of 69 twins (21% of total) may introduce an error if any appreciable number of these are small only by reason of the twin birth and are not truly premature; it is also noted that midwives continually record as premature, babies over 5½ lb.,

* The County Council is the supervising authority for midwifery under the Midwives Acts for the whole of the county excepting the Borough of Nuneaton; a county council hospital in Nuneaton has been included in the figures. The administrative area includes 106 midwives in domiciliary practice, 16 nursing homes, four maternity homes, three municipal hospitals, and four voluntary hospitals admitting midwifery cases.

† "In England and Wales in 1939, twins formed 1.5% of legitimate maternities. According to the data from Queen Charlotte's Hospital, twins have a mean birth-weight of 5½ lb. compared with 7½ lb. for all babies." (Personal communication from Dr. W. J. Martin, London School of Hygiene and Tropical Medicine.)

‡ Arch. Dis. Childh., 1944, 19, 93.

TABLE II.—SURVIVAL ACCORDING TO MIDWIFERY CIRCUMSTANCES

	Number born	Number surviving	Per cent.
A Domiciliary Midwives	67	47	70.2
B Nursing and Maternity Homes	63	50	79.4
C Municipal Hospitals	77	58	75.3
D Voluntary Hospitals	127	104	82.0
Differences	D - A = 12 ± 6.6 D - B = 3 ± 6.2 D - C = 7 ± 6.0		

not all of whom are full term. In short, the arbitrary "weight ceiling" clearly introduces some degree of inaccuracy into the picture.

As in previous years, survival is closely related to birth-weight, and chances remain good down to 3½ or 3 lb., when there is a sharp drop. The first 24 hours' toll of dying is again seen to be very high, a fact which has considerable bearing on all preventive measures which are designed to take effect after birth, since these babies will probably die before

measures can be fully concerted for their succour. The first 24 hours' toll is again seen to be equally distributed over all weight groups, suggesting that those dying in the higher weight groups may be "non-viable."

The variation in survival according to midwifery circumstances was less marked in 1944, and the only difference which has any statistical significance is between the voluntary hospitals and the domiciliary midwives. It is of interest that between one-third and one-half of premature babies whose mothers have been confined in hospital are in complicated deliveries, whereas the complication rate in the domiciliary and nursing and maternity-home groups is much lower. It is difficult on the evidence to say whether this does or does not impose an added strain on the hospitals; it would seem that a baby born from a complicated delivery would be more difficult to rear; yet the survival rate in complicated cases was 71%, only a little less than the general rate of 78%. There is a suggestion, in need of confirmation, that complications of pregnancy are an important factor tending towards prematurity (being present in 38% of cases), but that if in such cases the

TABLE III.—COMPLICATIONS OF PREGNANCY (MATERNAL)

These were present in 109 to 380 (35%) of all pregnancies, including stillbirths, and in 92 to 334 (27.5%) of all live birth pregnancies as follows:

Toxaemia	34	Heart case	2	Infantile uterus	1
A.P.H.	13	Albuminuria	2	Attempted abortion	1
Breech and extended	11	Placenta Praevia	1	Appendicectomy	1
breech	11	Membranes ruptured	1	Pyelitis	1
Caesarean Section	9	very early	1	Marked anaemia	1
Induction	8	Uterine cysts	1	Eclampsia	1
Forceps	5	Shock and fall	1	Retained Placenta	1
Hydramnios	5	Working on Army			
Diabetes	4	gunsite	1		
Nephritis	3	Syphilis	1		

TABLE IV.—PARITY

The following table shows prematurity in relation to parity in the different weight groups:

Pre- vious Preg- nancies	The number of previous pregnancies										Total	Per cent. of total
	5-5½	4½-5	4-4½	3½-4	3-3½	2½-3	2-2½	1½-2	1-1½	0		
0	59	49	24	18	11	12	6	5	0	184	55	
1	22	16	11	2	3	6	1	0	2	63	18.9	
2	12	10	12	4	3	1	1	0	1	44	13.2	
3	8	5	6	1	0	1	0	1	1	23	6.9	
4	3	1	3	1	0	1	1	1	0	11	3.3	
5	0	1	1	0	0	0	0	0	0	2		
6	0	1	0	0	0	0	0	1	0	2		
7	0	1	0	1	0	0	0	0	0	2		2.7
8	0	1	0	0	0	0	0	0	0	1		
9	0	0	0	0	0	2	0	0	0	2		
	104	85	57	27	17	23	9	8	4	334		

premature baby is born alive, the chance of survival is equal to that in a normal pregnancy. There appeared to be no other difference (*i.e.*, as to age, sex, or parity) between the midwifery groups. Male premature babies appear to be slightly fewer in number and to die more readily (two males to one female). The table showing parity in relation to prematurity is of some interest. The overall age of the mothers was 29.4 (S.D. 6.5); in over 55% of cases it was the first-born baby who was premature.

The figures* for all maternities (legitimate) in England and Wales for 1939 were as follows: Age of mother for all births, 29.1 (mean), S.D., 7.05; age of mother for primiparae, 26.4 (mean); S.D., 5.02. These ages would tend to be slightly higher for premature deliveries, as there is a small negative correlation between the age of the mother and the weight of baby. The primiparas provided 42% of all births in England and Wales. This figure can be expected to have risen to 51% in 1944, owing to the increase in the birth-rate (18%), the additional deliveries being, presumably, mainly in primiparas. It appears, therefore, that there is no significant difference as regards age and parity between the premature and full-term deliveries.

The Pilot Press, Ltd., 45, Great Russell Street, London, W.C.1, have produced at a price of 1s. per copy an illustrated booklet, *The Story of Penicillin*, written by George Lacken. In a foreword Sir Alexander Fleming deplores the irresponsible publicity which has frequently been given to penicillin and which has led many sick people to expect from it more than it can do. This little booklet is concerned less with the uses to which the new drug has been and may be put, than with its discovery and method of manufacture. "Penicillin has had," says Sir Alexander Fleming, "a romantic career. Born in times of peace by a stray mould spore implanting itself on a microbic culture where it was not wanted, it reaches maturity at the height of the greatest of all wars, when it was there to help the wounded soldier, and do its part in preventing the awful miseries resulting from septic infections such as were seen in the last, and in all past wars."

On VE-Day 103 volunteers, out of a total of 105 invited, attended a blood donors' session at Leighton Buzzard, Bedfordshire, under the Emergency Transfusion Service of the Ministry of Health and the Medical Research Council. In relation to its size—pre-war population 7,050—Leighton Buzzard is believed to have set up a record for blood donations for Service and civilian needs. Out of a panel of between 500 and 600 donors, 220 have each given 10 or more donations, and 410 five or more. Over 5,500 bottles of blood have been collected in the town since 1940 by mobile units from the N.E. London Blood Supply Depot, Luton.

Sir Joseph Barcroft, F.R.S., has accepted the invitation of the Council of the Royal Institute of Public Health and Hygiene to be appointed as the Harben Lecturer for 1945. Three addresses will be delivered on the subject of the respiratory function of the blood in the Lecture Hall of the Institute at 28, Portland Place, London, W.1, on Monday, Tuesday and Wednesday, December 10th, 11th and 12th, 1945, at 3 p.m. on each day.

* Personal communication from Professor Major Greenwood, London School of Hygiene and Tropical Medicine.

BOOK REVIEWS

Aerobiology. Edited by F. R. MOULTON. 1942. Washington, U.S.A.: Amer. Assoc. Advancement of Science. Pp. 289. Illustrated. No price given.

This symposium on aerobiology, published by the American Association for the Advancement of Science, consists of two distinct parts, dealing respectively with extramural and intramural aerobiology. The first and shorter section is concerned with the spread of pollens and fungous spores which may act as allergens, the local and long-distance transfer of plant pathogens, the migration of insects, and the bacterial content of marine and high altitude air. It therefore contains material of interest particularly to botanists, agriculturists, and "allergists." The 29 articles in the second section on intramural aerobiology are contributed by a distinguished list of experts on the various aspects of this young and important branch of medicine, and cover a wide field from a discussion of the theory of air-borne infection to practical methods for its control. Among the subjects discussed are high-speed photography in the study of the number, size, velocity, and distance of expulsion of droplets expelled in talking, coughing and sneezing (a particularly interesting chapter and beautifully illustrated); the scope of air-conditioning as an antidote to atmospheric pollution; ultra-violet radiation and its application to the control of respiratory and wound infection; the importance of sunlight and daylight as bactericides; the use of germicidal mists (or aerosols); and methods for controlling dust-borne infection (by Andrewes and van den Ende). A better understanding of the mode of spread of respiratory and other airborne infections and the development of practical methods for their control are matters of urgent concern to public health workers. This volume supplies the necessary background to a study of these problems.

Sanitary Administration. By STEWART SWIFT, M.B.E. 2nd edition. 1944. London: Butterworth & Co. Pp. 493 + 53 pp. index + xlvii. Price 35s., postage 10d.

Although the consolidation of public health legislation in the 1936 Act considerably eased the burden of those who have to deal with the laws relating to environmental hygiene, the sanitary inspector and the medical officer of health have to know other acts. Mr. Stewart Swift, Chief Sanitary Inspector for Oxford, in his *Sanitary Administration*, has included them all in one volume. The author's intention was not so much to produce a substitute for any of the purely legal textbooks, but to relate law to administrative practice. Advantage has been taken of the production of a second edition to bring the subject matter up to date. This edition contains reference to all legislation which a sanitary official might need, including such out of the way items as the Motor Vehicles (Construction and Use) Regulations of 1937, dealing with the provision of lavatories in motor vehicles, and the 1924 Order of the Home Secretary on the subject of the deposit of explosives in refuse receptacles. The author has, in most instances, reproduced the text of sections of the statutes instead of making a précis which might not convey the exact meaning. While in general this practice has much to commend it, it has, at times, been carried too far, so that much has been included which those who have to refer to it would look for in a strictly legal publication. There is an instance of this on page 100, where the author sets out in full the section of the Act dealing with the right of appeal of owners aggrieved by the adoption by local authorities of sewers and sewage disposal works; and again on page 106, where he outlines the powers of a local authority to recover the cost of maintenance of certain lengths of public sewers. In some instances the précis itself is unnecessarily detailed, as on page 94, where the question of the determination by a tribunal of compensation for damage sustained by reason of the construction of a sewer on private land is dealt with.

The volume is well produced, is provided with a useful index, and is commendably free from errors. It should be noted, though, that Councils of Boroughs as well as County Councils and County Boroughs are empowered to make by-laws for the good rule and government of their areas. The

memorandum on the closing of and exclusion from school of 1927 is referred to on page 439, and the table on the next page giving the incubation and exclusion periods of the commoner infectious diseases is taken from this, but no reference is made to the revision of 1942. Possibly, too, the following might have been more happily phrased: "County Councils are mainly concerned in seeing that the councils of county districts carry out their duties under the Public Health Acts in a proper and satisfactory manner." In future editions a space might be found for the inclusion of particulars of the training of sanitary inspectors.

The author can feel he has achieved his aim of producing a volume which will be of real help to his colleagues and to others interested in public health.

Clinical Practice in Infectious Diseases. By E. H. R. HARRIES and M. MITMAN. Foreword by W. ALLEN DALEY. Second edition. 1944. Edinburgh: E. & S. Livingstone. Pp. 670. Price 22s. 6d. net.

The first edition of "Harries and Mitman" was published in 1940, and a reprint was issued in 1941. It is not surprising that before the end of the European war they found themselves obliged to bring out a second edition, and much credit is due to them for finding time during these busy years to make a thorough revision and to include new matter to the extent of some 100 pages. Two new chapters, on isolation and chemotherapy respectively, have been added. In the previous edition there was a summary at the end of each chapter; this has now been replaced by a most useful synopsis at the beginning instead. This not only makes it easy for the reader to acquaint himself rapidly with the contents of the chapter, but it also is a help to the student who wants to revise his memory of what he has read. The book begins with nine chapters on various aspects of infectious diseases, then passes to consideration of each infection in turn, and concludes with four chapters on the management and control of infectious diseases. The text is pleasantly free from ambiguity, and a discriminating use of typography breaks the matter up into easily digestible portions. The volume is easy to handle and the publishers have not made the war an excuse for straining the reader's eye with small type. The volume is, indeed, a credit to both authors and publishers, and should continue to prove an excellent guide to this all-important branch of medicine.

Lip-reading and Hearing Aids. By IRENE R. EWING, O.B.E., M.Sc. 1944. Manchester: University Press. Pp. 73. Price 4s. 6d.

The literature on the subject of lip-reading is inconsiderable in amount, and the publication of this authoritative account should be welcomed as of great value and help to all those who are deaf and those whose work and desire is to help the deaf. Until comparatively recently lip-reading was the sole avenue through which speech and language was communicated to children born deaf and those becoming deaf in the first few years of life. Many adults, too, have resorted to lip-reading in order to keep in conversational touch with their fellows. This little book—a second edition—not only covers the ground of the first edition, which mainly attempted to outline a method of teaching lip-reading, but also deals with the more recent methods of helping a deaf person, especially by the use of a suitable hearing-aid.

The author describes in a delightfully clear and simple way the nature of the handicap which deafness imposes on its victims, says there is at least one way of alleviation for all persons who possess their sight, and describes how to make use of that way. She emphasises the fact, now well known among those who have had intimate experience of training the deaf, that lip-reading combined with the use of a suitable hearing-aid will benefit a deaf person considerably more than the use of either method alone. Attention is drawn to the fact that many people do not speak as carefully as they should, and this makes it more difficult for the deaf to be able to follow their conversation by lip-reading. The author shows by

testing a group of deaf persons that consonants can be identified in nonsense syllables in a very small proportion of cases. The capacity to lip-read consonants when tested with familiar words is materially greater. While in tests with whole sentences containing familiar words the percentage of consonants identified was very high. This proves how greatly context helps a deaf person to lip-read.

As the author points out, success in lip-reading depends on many factors and varies greatly in different people with approximately the same degree of deafness. These factors are set out and discussed thoroughly. Emphasis is laid on the mental attitude of the deaf person; on the need for practice in lip-reading; on the use of a mirror to enable the deaf person to watch his own speech movements; and on the methods and attitude of the teacher if lessons are being taken in lip-reading. This last point is very important; as the author points out, a teacher should study the mental characteristics and attitude of a pupil and adapt himself or herself to these as a primary condition; otherwise success may not be achieved. There are many points of guidance for both teacher and pupil in this book, and also for the friends and relations of deaf people. At the end of the book the author has taken the practical and helpful step of describing 20 sample lessons for the guidance of teachers of lip-reading and pupils alike, showing the many difficulties encountered and how to overcome them. Finally, to complete the book, an appendix gives notes on the fundamentals of the subject and sample practice papers.

The value of the book is richly enhanced by the fact that the author herself is a deaf person, and as such is able to bring not only an intimate knowledge from personal experience of the difficulties encountered by the deaf, but also a sympathetic understanding of these subtle factors in the make-up of so many deaf persons which have to be looked for to be discovered.

Aids to Clinical Pathology. (Students' Aids Series.) By DAVID HALER, M.B., B.Sc. (HONS). 1944. London: Baillière, Tindall and Cox. Pp. viii + 358; 21 illus. Price 6s.

In combining the old "Aids to Pathological Technique" and "Aids to Practical Pathology" in the present volume, Dr. Haler has been obliged to condense his material. This fact is perhaps of no great consequence so long as readers do not regard the book as a substitute for established laboratory manuals, but use it, as the "Aids" series is meant to be used, only to assist the memory when the larger textbooks are not available. In this respect Dr. Haler's book may be more useful to the medical student—who may wish to look up some point in laboratory technique—than to the technician, for whom there is no bench companion to compare with the manuscript notebook, laboriously compounded and conscientiously corrected and expanded; but both categories of readers will find in its pages many pieces of useful information and advice. It is to be regretted that in the section on bacteriology no mention is made of the use of desoxycholate-citrate agar in the isolation of intestinal pathogens, and few would agree with the description of the colony differences of the various types of diphtheria bacilli given on page 163. Such typographical errors as "C. tetanus" and "B. typhus" need to be corrected in later editions.

Your Body. How it works and how to keep it working well. By the Radio Doctor. London: Burke Publishing Co. Pp. 86. Price 2s. 6d.

The Radio Doctor has become a national institution. For 2s. 6d. can be purchased in handy form the gist of a number of his talks on the body, how it works, and how to keep it working. The text is interspersed with illustrations and diagrams of those parts of our anatomy which are apt to cause uncalled-for trouble. As usual, what the Radio Doctor says attracts attention. For instance, "You know of people whose lives seem to have been divided into two parts—'before my operation,' and 'since my operation,'" or, "There's no magic about medicine; if your body is tired out, you need sleep, not salicylates."

SOCIETY OF MEDICAL OFFICERS OF HEALTH

A meeting of the Council was held at Tavistock House, Tavistock Square, London, W.C.1, on Thursday, April 26th, 1945, with the President (Prof. R. M. F. Picken) in the chair. There were also present: Sir Wilson Jameson, Drs. Malcolm Barker, G. F. Buchan, W. A. Bullough, J. A. Charles, G. Lissant Cox, I. G. Davies, Jas. Fenton, J. M. Gibson, E. A. Gregg, F. Hall, A. D. Hebblethwaite, C. E. Herington, Katherine M. Hirst, J. Johnstone Jervis, R. H. H. Jolly, Malcolm Manson, A. Massey, A. A. E. Newth, Thos. Orr, R. H. Parry, Virginia Saunders-Jacobs, J. E. Spence, J. A. Stirling, Mr. A. Gordon Taylor, Drs. G. McKim Thomas, H. C. Maurice Williams and F. T. H. Wood.

Apologies for absence were received from Sir Allen Daley, Drs. Cyril Banks, N. D. Begg, J. J. Buchan, Jas. Ferguson, F. Gray, W. M. Frazer, J. W. Hunter, R. A. Leader, G. V. T. McMichael, H. Paul, J. A. Struthers, H. G. Trayer and J. Greenwood Wilson.

The minutes of the meeting held on February 2nd, 1945, as published in PUBLIC HEALTH (March, 1945) were amended to record that the Home Counties Branch and others approved the Memorandum on the Education Act, 1944, "without prejudice to the position of Medical Officers of Health of Exempted Districts".

Supply and Training of Sanitary Inspectors.—A letter from the Ministry of Health invited the Society to assist a special scheme to secure the supply and training of sanitary inspectors in the post-war period. The suspension of recruitment during the war would make it necessary to train and qualify something like 1,000 new inspectors during the next three or four years and the first course would start at Manchester or Birmingham in the near future. The Minister hoped the Society would nominate a panel of medical officers of health from whom he could select one or more to serve on selection committees which would interview candidates for courses to be held in various parts of the country. The Council agreed to submit the following names of medical officers of health conveniently placed to serve on selection committees in various parts of the country: Dr. V. T. Thierens (Blackburn), Dr. C. Metcalfe Brown (Manchester), Dr. W. M. Frazer (Liverpool), Prof. J. J. Jervis (Leeds), Dr. R. H. H. Jolly (Wolverhampton), Dr. A. Massey (Coventry), Prof. R. H. Parry (Bristol), Dr. H. Paul (Smethwick), Dr. J. Greenwood Wilson (Cardiff), Dr. A. S. Hebblethwaite (Sunderland), Dr. I. E. McCracken (Newcastle), Dr. Jas. Grant (Gateshead), Dr. J. A. Fraser (North Riding C.C.), Dr. T. Lloyd Hughes (Middlesbrough), Dr. Cyril Banks (Nottingham), Dr. E. K. Macdonald (Leicester), Dr. Jas. Fenton (Kensington), Dr. J. W. Hunter (Ipswich), Dr. W. B. Stott (Haywards Heath).

Consultant Paediatricians.—A memorandum was received from the M. & C.W. Group in reference to the appointment by local authorities of consultant paediatricians to visit children under five in their own homes at the request of general practitioners. It had been reported to the Group that the Ministry of Health had lately refused to sanction such an appointment, in view of Section 204 (1) of the Public Health Act, 1936, which debars local authorities from establishing a general domiciliary service by general practitioners. In the opinion of the Group the recent Circular 20/44 gave reason to hope that the Ministry might be persuaded to reconsider their decision and extend to under five's types of special domiciliary service comparable to that already approved in the case of premature infants. The Council agreed to commend this suggestion for consideration by the Ministry.

Direct Approach by Government Departments and others to Branches and Groups of the Society.—The President reported that in connection with recent legislation involving the early issue of Orders and Regulations he had been asked to sanction direct approach by Government Departments and others to Branches and Groups of the Society especially concerned, for any suggestions they wished to submit. Knowing that the Society would wish to be helpful in such matters he had sanctioned the direct discussion of several urgent proposals by Group representatives with departmental officials subject to a subsequent report to Council. But he thought it might be advisable to reaffirm the principle that all negotiations with other bodies should be through the Council of the Society, and he suggested that the General Purposes Committee should consider any special procedure that might be authorised in cases where Government Departments and others desired immediate contact with Branches and Groups on matters of great urgency. The Council agreed that the General Purposes Committee be requested to act on the President's proposal at their next meeting.

The Askwith Scale of Salaries.—Resolutions were received from the Council of the British Medical Association as follows:

(a) "That as from April 1st, 1945, the prescribed period of one year's notice be given to the appropriate bodies to terminate the Askwith Agreement."

(b) "That the Society of Medical Officers of Health be asked for its observations on the question whether negotiations for future scales for the Public Health Service should be conducted

on the same basis as those preceding the Askwith Memorandum (i.e., with representatives of local authorities and an independent chairman) or whether such negotiations should form part of the general negotiations between the Ministry of Health and the medical profession on the terms and conditions of service in the proposed new medical service."

It was agreed to adjourn discussion of Resolution (b) until the meeting of Council on May 25th.

Report of Salaries Committee.—Dr. Massey reported that after a further reference of the draft of a revised scale of salaries for consideration by the Branches, the Salaries Committee now asked the Council to approve the recommendations for submission to the B.M.A. Council. After some minor amendments the revised scale was adopted *nem. con.* for submission to the B.M.A. Council, and for circulation to all members of the Society. Cordial thanks were expressed to Dr. Massey for his labours as chairman and to the committee for the conscientious discharge of their reference at a difficult time.

Grants and Payments to Groups. Dr. G. F. Buchan reported that the sub-committee appointed by the Council to consider grants and payments to Groups had held a further meeting on Friday, March 2nd, 1945. The Committee had before them information from the various Groups and Branches as to accumulated funds and the general opinion of Groups and Branches as to the minimum capitation fee required to carry on their business. After careful consideration of all the relevant facts the sub-committee unanimously resolved to recommend the Council that the annual payments to approved Groups should be (1) an annual grant of £5; and (2) a capitation fee for each approved member of the Group of 2s. 6d. per annum. It was further agreed that all Groups must make every endeavour to keep within these allowances. The Dental Group is excluded from the above resolutions as they now receive a capitation fee of 5s. per annum. The Committee also resolved that the Council of the Society should have no financial responsibility for sub-groups which might be formed by Groups or Branches.

The Committee considered the present representation of the Society on other societies and were of opinion that the Council, before appointing members to represent the Society on other bodies, should take into consideration the value of such representation and the cost to the Society.

The report was approved and adopted by the Council.

Chairmanship of Council.—Dr. Gibson submitted a report by Drs. G. F. Buchan and Jas. Fenton on the organisation of the Society as approved by the General Purposes Committee. The point they had to consider was the question of arranging for a chairman of Council to hold office for a number of years. At the present time the President is the chairman of the Council, and in order that the greatest number of Fellows may hold this high office the election to the presidency is an annual one. The President also presides at all meetings of the Society itself and at the provincial meeting of the Society and at all special functions. It was thought desirable that these latter duties of the President should continue, but for the ordinary business of the Society the annual change in the chairman of the Council was an undesirable feature.

Article 28 of the Articles of Association adopted February 15th, 1935, reads as follows: "The Council may from time to time make, alter, and repeal by-laws for regulating the conduct of their business and the proceedings at their meetings."

No. 1 of the By-laws made by the Council for regulating the conduct of its business at its meetings reads as follows: "At all meetings of the Council the President shall take the chair; in his absence, the immediate Past-President shall preside; and in the absence of the President and the Vice-Presidents, the Fellows shall elect a Chairman."

In all the circumstances the General Purposes Committee resolved as follows: That By-Law No. 1 be rescinded and in its place the following be substituted: "(a) The Council at its first meeting in each session shall elect a chairman who shall be subject to annual re-election and shall generally hold the office of chairman for three years but in no case for more than five years. (b) In the absence of the chairman at any meeting of the Council the Fellows shall elect a chairman."

The report and the memorandum were approved by the Council.

The Negotiating Committee.—The Committee forwarded a report of its recent discussions and invited considered comments from the Society upon proposals set forth in the document. The Council agreed to submit two points: (a) that there should be only one statutory advisory body—viz., the Central Health Services Council, to advise the Minister in connection with the proposed National Health Service; (b) that para. 40 of the report of the Negotiating Committee should be amended to read: "Provision of Health Centres to be the subject of controlled experiment, such experiment to be initiated centrally or locally, with different types of Centre . . . including ancillary staff."

Apart from these submissions, the Council only desired to reaffirm the principles set out in the Society's Memorandum on the White Paper approved and circulated in September, 1944.

Representation of the Society.—Dr. Fraser Brockington was elected to succeed Dr. G. F. Buchan as representative of the Society on the Nutrition Society.

B.M.A. Elections.—It was decided to recommend Public Health Service members of the Society to support candidates for the B.M.A. elections for 1945-46 as follows: For Council: Prof. R. M. F. Picken and Dr. Jas. Fenton. As Representatives for Annual Representative Meeting: Drs. G. F. Buchan, J. M. Gibson, J. W. Hunter and Prof. J. Johnstone Jervis. As Deputy Representatives, A.R.M.: Drs. Jas. Fenton, J. A. Stirling, J. A. Struthers and Prof. R. M. F. Picken.

Central Housing Advisory Committee.—The President reported that the Society had been invited at short notice to submit evidence to sub-committees of the C.H.A.C. appointed (a) "to consider whether further guidance as to standards of fitness for habitation can be given within the terms of the Housing Acts"; (b) "to report on the management of Municipal Housing Estates." At his request Dr. R. H. H. Jolly with Prof. J. Johnstone Jervis, Dr. J. A. Scott and Dr. W. B. Stott were preparing a memorandum in reference to (a), and Dr. Caryl Thomas was co-operating with colleagues in drafting observations on the subject of (b).

Life Membership. On the nomination of the Northern Branch, Dr. E. G. D. Benson was elected a fully paid Life Member of the Society, under Article 12. Dr. Benson joined the Society in 1920.

Representation on Council.—The Inter-Group Committee reported that Dr. A. Morrison (Derby) had been elected the extra Council representative under Article 19 (d) for the session 1944-45.

Post-War Sanitary Administration.—At the suggestion of the Ministry of Health, the Sanitary Inspectors' Association asked the Society to appoint representatives to discuss this matter with representatives of the S.I.A. It was agreed that the President with Drs. G. F. Buchan, Jas. Fenton, J. M. Gibson and J. Johnstone Jervis should represent the Society at the proposed conference.

The Council then adjourned.

TUBERCULOSIS GROUP

President: Dr. H. Selby (Med. Supt., Co. Sanat., Marketfield).

Hon. Secretary: Dr. R. L. Midgley (Med. Supt., Hawkmoor Sanat., Bovey Tracey).

A meeting of the Tuberculosis Group Committee was held in London on February 16th. The President occupied the chair, and there were present ten other members. Dr. Hugh Ramsay was welcomed as a new member of the committee.

The minutes of the previous meeting were read and signed. The revision of salaries memorandum was discussed along with letters from Dr. Lissant Cox. The feeling of the meeting was that there is still too much discrimination in favour of chief administrative officers over chief clinical officers, that clinical officers should not start at the minimum of the new scale, but should take their place in it according to their years of service, partly for financial reasons and partly to safeguard their professional status. It was also argued that ten years added service was reasonable for superannuation purposes as compared with other local government servants.

The latest developments regarding the Association of Municipal Specialists were discussed, and it was felt that the tuberculosis service had not had that consideration due to it.

A letter on the Consultant Services Committee from Dr. Lissant Cox to Dr. James Watt, for consideration by the Joint Tuberculosis Council, was read and discussed. All agreed on the need for direct representation of the tuberculosis specialists on the committee.

A report was given of the steps being taken for the proper inclusion of persons suffering from pulmonary tuberculosis in the Ministry of Labour rehabilitation scheme.

YORKSHIRE BRANCH

President: Dr. J. A. Fraser (C.M.O., Yorks North Riding).

Hon. Secretary: Dr. J. M. Gibson (M.O.H., Huddersfield).

A meeting was held in Leeds, on March 23rd, 25 members being present.

The minutes of the meeting held on February 23rd were approved.

The Hon. Secretary submitted a letter, dated March 7th, 1945, received from the Acting Executive Secretary of the Society, in which he stated it had been agreed by the Council that representation should be made by the Society to the Ministry of Health, regretting the refusal of the General Nursing Council to recognise the Tuberculosis Certificate as a qualification for inclusion on the Nurses' Register, as evidence of efficiency in the Tuberculosis Service. The fact that the Municipal Service is so inadequately represented on the General Nursing Council was again discussed.

HOUSING IN TOWN AND COUNTRY

A discussion on housing was opened by Dr. J. A. Fraser, from the rural point of view, and by Dr. J. Tudor Lewis, M.O.H., Barnsley, who discussed the urban point of view.

Dr. Fraser suggested that in rural areas houses should be erected in groups to form villages or hamlets, and not be scattered indiscriminately over the countryside. "Tied" cottages he considered unnecessary. By grouping the houses together, the supply of services would be simplified. Large units of administration were advisable for planning and supervision, under whole-time officials. Standardisation of equipment would be most helpful. Smokeless fuel grates, he thought, were to be recommended, particularly those open back and front—one portion to serve the kitchen, and the other the living room. Smoke abatement should be dealt with in the country as well as in the town. Refrigerators should be fitted if there was a supply of electricity, and, even in country houses, stainless steel sinks and draining boards. Wash-boilers also were an essential.

Dr. Fraser felt that in the past insufficient attention had often been given to the selection of sites. Care should be taken to see that the areas selected were free from flooding, and in the actual construction of the houses all unnecessary wood-work should be avoided. Greater attention should be paid to the manner in which the pipes bringing the water supply were introduced into the houses. They should not be taken under the roof, where they were vulnerable to frost.

Dr. Lewis considered that Barnsley was probably typical of many urban areas; many of the houses were unfit for human habitation. As there had been an increase in the birth-rate, and as no building had taken place during the war, many houses were now overcrowded. In spite of this there was no evidence that the general public health had been affected. The aim should be, however, to abolish unsatisfactory houses, and to erect new ones. It had been estimated that one and a quarter million new houses would be necessary for the country as a whole; Dr. Lewis thought this an underestimate. Government control would be needed for many years. Dr. Lewis commended the recommendations made by the "Burt" Committee on construction of, and fittings to, houses, but regretted there was no recommendation in regard to freedom from vermin.

Dr. H. T. Bates said that the M.O.H. in county areas often knew very little about housing plans, as they were not always consulted.

Dr. J. J. Buchan said that additional houses to the extent of approximately 1½% were required every year, and as none had been built for the past six years there was much lee-way to be made up. In this respect alone, half a million houses were required, apart from the number needed to replace those destroyed by enemy action. In advising his own authority on the size of houses, he had found the following proportions useful: 60%, three-bedroomed houses; a little under 20%, four-bedroomed houses; a little under 20%, two-bedroomed houses; approximately 2% single rooms for old people.

Dr. J. Wood Wilson said that electricity, water, and a system of sewage disposal, were all as necessary in the country as in the town. He was afraid that the Rural Housing Act gave little power. Its main advantage was that it preserved the English characteristics of villages.

Dr. E. D. Irvine felt that we should press for the highest standard available in regard to both equipment and amenities. He feared that the pre-fabricated houses would, if infested by vermin, be difficult to deal with. To help large families the rent for four-bedroomed houses should be about the same as that for three-bedroomed houses. The Rebate Scheme in operation did not give sufficient assistance in this respect. In his area there were approximately 0.8% of buildings (occupied by families) which he regarded as cellar dwellings, although they were not strictly within the definition of Section 13 of the Housing Act.

An ordinary meeting of the Branch was held at Leeds on February 23rd. This was preceded by a meeting of the council. At the ordinary meeting 24 members were present. The minutes of the meeting held on January 26th were approved.

The Hon. Secretary reported upon the case of a nurse who had contracted pulmonary tuberculosis during the course of her employment, and which was reported recently in the journal, *Local Government Service*. As a result of representation made by the National Association of Local Government Officers, the authority concerned had accepted responsibility, and the nurse in question was being paid full salary until such time as she might again be able to earn her normal salary.

The Hon. Secretary reported the death of Dr. H. M. Leete, which occurred after a brief but severe illness on February 15th. Dr. Leete had been Medical Superintendent of the Hull City Hospital and a member of the Yorkshire Branch for a considerable number of years.

Only a few weeks ago he had read before a meeting of the Branch a much appreciated paper on diphtheria. The members stood in token of Dr. Leete's memory, and it was arranged to convey the sympathy of the members to Mrs. Leete in her bereavement.

The Hon. Secretary reported on a meeting of the Council of the Society held on February 2nd. He said that a discussion had taken place on the position of the Society in its relation to the proposed Academy of Medicine. It was resolved that, in the event of an Academy of Medicine being established, representation be made to the effect that no such Academy would be complete without having a section devoted to the subject of preventive medicine, and represented by the Society of Medical Officers of Health.

The Honorary Secretary reported on difficulties which had arisen in his area in connection with the adoption of children. He referred particularly to the transfers of very young children which were taking place from a nursing home in the South of England, at an age when the children were not able to withstand the hardships of a long and difficult journey. The Hon. Secretary also drew attention to the fact that in some cases of adoption there was no evidence available regarding the father of the child. It was resolved that representation be made to the Council of the Society on the advisability of approaching the Minister of Health for some amendment of the Adoption of Children (Regulation) Act, 1939, and Regulations made thereunder, so as to provide for the following: (a) When a child is being transferred from the area of one welfare authority to another, with a view to adoption, the authority in whose area the child is for the time being residing should be notified of the proposed transfer, and the transfer should not take place until a certificate has been issued by the responsible official of that authority, stating that the child is in a fit state for transfer, consideration having been given not only to the physical condition of the child, but also to weather conditions and the length of the journey to be undertaken; and (b) stricter enquiries to be made into the paternity of a child before arrangements are made for its adoption and the information obtained from such enquiries made available to the adopting parents. It was also resolved that a copy of this resolution should be forwarded to the Committee appointed to enquire into the provision made for children deprived of a normal home life, and that a statement be forwarded, outlining the reasons relating to the above.

PREVENTIVE PSYCHIATRY

Dr. Arthur Pool, Physician Superintendent, The Retreat, York, then gave an address on psychiatry and preventive medicine. He said that in treating a patient for any disease, or complaint, we must take into account the mental as well as the physical condition. Psychiatry covered a wide field, including neurosis, psychosis, delinquency, mental deficiency, psychopathic personality, child guidance, and industrial psychology. No one could be regarded as a specialist in all of these.

Doctors were slowly realising what an important place neurosis occupied in relation to complaints usually regarded as physical. Halliday had shown, by examining some hundreds of insurance certificates, that 30% of the patients certified as unfit for work were suffering from illness of neurotic origin, although on the certificates they had been classified as rheumatism, dyspepsia, headache, etc. It could be generally accepted that in approximately one-third of the patients who consulted doctors the physical symptoms of which they complained were emotional in origin. Such conditions as blushing, perspiring, pallor, could arise from emotion alone without any physical cause. Also, such symptoms as nausea, vomiting, diarrhoea, could be produced by excitement. These were all of a temporary or transient character, but prolonged symptoms recognised as a diseased condition might be produced in the same way. Our aim should be to get into touch at an early stage with persons showing any signs of psychosis. Out-patient clinics were doing much to assist such people. Clinics should be held in the evening so that people could attend who were at work during the day. At least an hour was needed for every new case. Delinquency had been increasing, due, Dr. Pool considered, to declining discipline in the home. Graphs showing the fall in attendance at Sunday Schools, compared with graphs recording the increase in delinquency, showed a remarkable resemblance. He did not suggest that this was proof of cause and effect, but there was a close relationship. Stealing was observed in children who lacked love and affection.

How to lessen mental deficiency was a problem which had not yet been solved. In his opinion no effective case had been made out for eugenic sterilisation, as most of the lowest grade mental defectives were born from normal parents. Among psychopathic personalities were included vagrants, prostitutes, misfits, alcoholics, drug-addicts, the majority of whom could not be changed by psychology; 80% had abnormal electro-encephalographs. Moreover, persons in different walks of life had different moral standards. It was quite obvious from the correspondence columns of the medical journals that even the medical profession itself was divided in this respect.

Dr. Galloway asked for guidance regarding the standards of conduct considered advisable for moulding character. Dr. Pool replied

that he believed in adequate training and discipline. A lot of nonsense was voiced about giving unlimited freedom to children, and much trouble was caused by the wrong interpretation of this. He regretted that so many senile dementers were being certified. Advancing age caused mental deterioration in all, and provision should be made for dealing with old people in such a way that certification could be avoided. He thought the employment of mental defectives was not adequately developed.

Dr. Jervis wondered if there was a difference between child delinquency and adult delinquency. In a child it seemed to be regarded generally as a remedial defect which could be rectified by child guidance. He agreed that eugenic control could not give the results claimed for it, but if no attempt were made to ascertain the mental history of those about to marry, the sub-normal might appear as a dominant character. Dr. Pool said that in the psychopathic group of whatever age the defect in a fair proportion of cases was fixed. If the sub-normal defect were not too great, however, the individual could be trained to reach a reasonably good standard. Regarding the hereditary acquisition of sub-normal characteristics, he said there was a tendency to blame our ancestors for our bad points and to claim the good ones as our own. Dr. Lewis called attention to the inadequate number of trained psychologists, and to the value of group therapy. Dr. Macdonald criticised the attitude of education authorities in pressing too much for educational attainment at the expense of character.

Dr. Pool was cordially thanked for his instructive and helpful address.

NORTHERN BRANCH

President: Dr. J. B. Tilley (C.M.O., Northumberland).

Hon. Secretary: Dr. G. Hurrell (Tuberculosis Officer, Newcastle).

A meeting of the Branch was held in Newcastle-upon-Tyne on March 10th. There were present the President and 17 members. The minutes of the meeting held on January 27th were read, confirmed and signed by the Chairman.

Dr. Hebbelthwaite informed members that he had attended the meeting of Council in London on February 2nd. He gave a brief account of the proceedings, with particular reference to the question of salaries, and informed members that the Salaries Sub-committee were to prepare another draft report, embodying as many as possible of the observations submitted by various Branches. A suggestion that a percentage increase all round should be applied had been turned down by the Council.

Dr. J. A. Edward, Chief Medical Officer, Vickers Armstrongs Ltd., Newcastle-upon-Tyne, delivered an address on "The New Employee." After a general discussion, during which Dr. Edward answered many questions put to him, Dr. McCracken, on behalf of the Branch, moved a hearty vote of thanks to him for his most interesting and informative address.

A meeting was held in Newcastle-upon-Tyne on April 13th. There were present the President and 23 members. The minutes of the meeting held on March 10th were read, confirmed, and signed by the Chairman.

A letter was read from central office indicating that Dr. Benson was now eligible for fully-paid life membership of the Society and it was decided that the Branch would nominate him for such membership.

A letter was read from Dr. Jean Mackintosh, President of the Maternity and Child Welfare Group, drawing attention to the lower rate of cost of living bonus usually paid to women medical officers of local authorities. She suggested that a resolution be moved to the effect that in the new salary scales there should be no differentiation of sex and that the salary should be inclusive of bonus. The Branch considered that there was no differentiation in sex in the new salary scales, which were inclusive of bonus, and it was agreed to inform Dr. Mackintosh to this effect.

The Branch hoped that every effort would be made to expedite the matter of the proposed increases in salary, which had been under discussion for a very long time.

The Branch discussed the B.M.A. Report on negotiations in connection with the White Paper, and the following resolutions were passed by the Branch and will be submitted by the Branch's representative to the next meeting of the Council of the Society:—

1. *Area Planning Council* (Section 25).—"That the Area Planning Council should have medical representation on the Regional Council, without upsetting the balance of non-medical to medical representation."

2. *Local Executive Authorities* (Section 35).—"Co-opted members should compose one-third of the Committee; one-half of them to be medical."

3. *Further Recommendations*.—"That the Society press for the full safeguarding of the professional freedom of each doctor employed by local authorities, voluntary hospitals and municipal hospitals, or otherwise working within the National Health Service, by (a) making nationally agreed scales of salary or remuneration mandatory on all

employing bodies within the scheme; (b) by setting up effective machinery, such as statutory tribunals to which all matters of dispute whether financial, related to range and terms of service, or complaints of misconduct, incompetence, or negligence may be referred by either party; (c) by extending security of tenure to all medical officers of health of local authorities."

WELSH BRANCH

President: Dr. H. R. Tighe (M.O.H., Swansea C.B.).

Hon. Secretary: Dr. G. McKim Thomas (M.O.H., Cardiff R.D.).

A meeting of the Welsh Branch was held at Cardiff on February 17th. Twenty members and nine visitors were present. Invitations had been extended to the members of the Cardiff Division of the B.M.A. and the Cardiff Medical Society. The minutes of the meeting held on January 6th were approved.

The subject of the meeting was the prevention of surgical and other infections in hospital wards. The opening speaker was Dr. V. D. Allison, Deputy Senior M.O., Ministry of Health, who dealt with the non-surgical side of the subject. The second paper was given by Dr. J. Gough, Lecturer in Pathology, Welsh National School of Medicine, who spoke on the surgical aspect. Both papers were of great interest and contained much useful and valuable information. That this was so was shown by the number of members who took part in the subsequent discussion, any points raised being suitably dealt with by the speakers.

A hearty vote of thanks was accorded to Drs. Allison and Gough for their illuminating addresses.

At a special meeting of the Branch at Cardiff on April 14th, the President and 14 members were present. The minutes of the meeting held on Feb. 17th were read, confirmed and signed by the President.

The meeting considered the "revised Draft of Salary Scale," the main body of which was approved, but several recommendations were made which were to be submitted to the Society for their consideration.

The President and 17 members were present at a meeting at Cardiff on April 21st. The minutes of the meeting held on April 14th were read, approved, and signed by the President.

The Branch passed a resolution supporting the nomination of Prof. Johnstone Jervis as President of the Society for the Session 1945-46.

Dr. A. Trevor Jones, of the Welsh Board of Health, read a paper on co-ordination of a hospital service. He reviewed the Emergency Hospital Scheme, and observed how the services had developed far beyond the original ideas and had given a great stimulus to hospitals of all categories within the scheme. The interchange of consultants and nursing staff had been of benefit to all, as had the equipment provided by the Government to many of the hospitals. The Blood Transfusion Service had worked well, and a good deal of knowledge had been acquired as a result. The organised transport run by central management had been very effective. The consultant advisors had contributed greatly to the treatment afforded in some of the smaller hospitals, and in his opinion the regular visits had done more to raise standards of work than formal written instructions. Reliable case records were very important to a successful working. It was desirable that where any extensions to a hospital were considered all the hospital authorities in the area should be informed of the proposals in order to avoid duplication of services. The pathological service had been greatly extended and there was satisfaction with the improvements and developments.

An interesting discussion followed and the President proposed a vote of thanks to Dr. Trevor Jones.

MATERNITY AND CHILD WELFARE GROUP

The Annual General Meeting and Social Meeting of the above Group will be held at the Sesame Club, 49, Grosvenor Street, London, W.1, on Thursday, June 28th, at 8 p.m.

A meeting of the Group was held in London on April 13th, when 23 members and guests attended.

The President, in the chair, introduced Miss Elizabeth Denby, HON. A.R.T.B.A., who spoke on bad housing and rehousing. Slum people, she said, could be found in any stratum of society, and therefore slum dwellers were not always slum people. She defined slum people as those who could not manage to keep a good home in a bad environment. It was often forgotten that on new estates the rents and running costs were higher, and that the old slum furniture transferred to a new house or flat looked out of place. These things tended to discourage the rehoused after their first excitement in the new home. A really new environment, she thought, ought to be given to people who kept a slum home well, and slum people should be given reconditioned old houses which could be redecorated frequently. The most appropriate way of improving a bad area was by putting in nursery schools and clubs. Children were most adaptable and teachable, and had the power, by example,

of teaching their parents. The easiest way to raise the self-respect of parents was indirectly through the child, and the nursery school could become a social centre where parents could meet; order and discipline were thus gradually increased in their family life. A neighbourhood which had been starved of any kind of culture could be enlightened by a well-run club, and the first consideration should be beauty. One could see how the self-respect of the members increased with the introduction of colour, music, and reading. Miss Denby deprecated the tendency to build large blocks of flats for families. People without families should have well-planned blocks, with self-working lifts, while families should have houses with gardens. Contrary to the usual belief, this scheme was less expensive and no more extravagant with land.

After an interesting discussion Dr. Katherine Hirst proposed a vote of thanks to the speaker.

MIDLAND MATERNITY AND CHILD WELFARE SUB-GROUP

A meeting of this sub-group was held on March 17th, 1945, at Birmingham. Thirty-three members attended, and Dr. Dickson presided.

The members were shown round the baby block of the Children's Hospital, Birmingham.

Dr. Winifred Young then delivered a most instructive and interesting address, illustrated by lantern slides, on gastro-enteritis and dehydration in infants. Dr. Young stated that when infants were suffering from gastro-enteritis a knowledge of the intricacies of their water metabolism became all-important; the prevention and the relief of dehydration were the most difficult problems of treatment. In infancy the excretory function of the kidney was still in the development stage, and a baby was able to regulate his salt and water metabolism only if there was enough water available for excretion. A full-term baby contained 75 to 80% of water; an adult only 60 to 65%. Furthermore, 65% of the body water was extracellular in infancy, but only 28% in adults. Experience had shown that a baby required much more fluid per kilogramme of body weight than an adult, and that even on a basis of surface area the fluid intake ought to be higher. The urine volumes, too, were considerably larger. Urea and mineral clearances were always low at birth, and they diminished if the minute volumes were small. They were lower in premature than in full-term newborn infants, but they increased towards adult level during the first year of life. Premature infants were very liable to oedema, and their low mineral clearances were the explanation of this. Any infant who was short of water was likely to suffer from renal failure. The infant fed on cow's milk suffered sooner than the breast-fed baby because his food contained more protein and salt. An infant needed more water whenever the output by the skin, lungs, or bowel was increased, because his urine volumes must not be allowed to fall. Extra water should be given if a baby was feverish, but salt must be given as well if he was suffering from diarrhoea and vomiting. If the dehydration had been mild, a solution of glucose up to 3% of his body weight was given at once; and if severe, 6-7% of his body weight. The solution was generally a mixture of 0-9% NaCl + 5% glucose in equal parts. Enough water must be given to establish a free flow of urine, and both the dehydration and oliguria should be relieved in a few hours. It might be possible to do this in an infant who was not vomiting by giving him fluids by mouth, but the intravenous route was frequently the only one by which the depleted body fluids could be restored in time, and was easily the most comfortable for the patient. Accurate charting of the output by all routes was essential in order to estimate the day-to-day requirements.

The thanks of the Sub-group was accorded to Dr. Young for her most interesting address.

SOUTHERN BRANCH

President: Dr. Catherine Avery (M.O.H., Winchester R.D.C.).

Hon. Secretary: Dr. H. C. Maurice Williams, O.B.E. (M.O.H., Southampton).

A meeting was held at an American Depot, Portsmouth, on March 27th. There were present the President and 11 members. The minutes of the meeting held on January 6th were approved as correct and signed by the Chairman.

The President reported the death of Dr. C. F. Pedley, of Bournemouth, who had been a member of the Society for many years. It was resolved that an expression of sympathy be sent on behalf of the Branch to his widow.

Captain H. S. Friedlander, Medical Corps, U.S. Army (Assistant M.O., Child Hygiene Division, New York City Department of Health) gave a most interesting talk on medical practice in America, and outlined the methods of qualification and practice in America as compared with those in this country. As Captain Friedlander also holds a British medical qualification, he was able to illustrate the differences

The Falling Birth-Rate

Population policy is a very live issue at the present time, and great interest is focused on the work of the Royal Commission which is now sitting. It is fitting that the subject should be intelligently discussed, so the little book* published by Dr. McCleary ought to have a wide appeal. It has been written for the general reader, avoiding the use of technical terms and keeping statistics within bounds. As an introduction to the study of this urgent and serious problem, Dr. McCleary's book is a clear, concise statement without over-simplification. He first presents the facts of the situation, showing that birth control is not the cause, but only a convenient means to an end regarded as desirable for its own sake. After examining various theories put forward to account for the decline of the birth-rate, Dr. McCleary is inclined to suggest that man has become more and more a creature (as Hamlet said) "with such large discourse, looking before and after." This rationalisation of life leads to a cold calculation of values, and in a troubled world even the new peoples, with all their abounding energy, tend to confuse the material with the spiritual.

In examining the efforts of various nations to deal with their population problems the author naturally turns to the brilliant work of Alva and Gunnar Myrdal. Sweden, a prosperous country untroubled by many of the conditions to which the decline of the birth-rate is usually ascribed, with an "active-minded, lively, and vivacious people, highly appreciative of the good things life has to offer in their beautiful and attractive country," yet leads the way to race suicide. The consequences of State propaganda in such countries as Germany and Italy were not particularly encouraging, although there was a temporary increase in the birth-rate. The Swedish authorities take the view that coercive or repressive measures are likely to fail. The great need is to create public sentiment in favour of larger families and at the same time to show that in the material world large families are at least as well off as small families. Dr. McCleary hardly lays enough stress on the importance of custom and fashion in determining the size of family, but there seems to be a general agreement that public measures designed to encourage larger families, such as allowances and special privileges of one kind and another, serve only to make the road easier but have little motive power.

State-registered and other nurses are urgently required for Service Hospitals in the Far East, particularly in India. The requirements include 1,000 State-registered nurses, and a number of unqualified nurses with six months' or more experience of nursing to serve as members of Voluntary Aid Detachments. Recruitment will be to Queen Alexandra's Imperial Nursing Service Reserve, and applications for Commissions in this Service are accepted only through appointments offices of the Ministry of Labour and National Service. These offices will be able to advise candidates about their eligibility to make application. Applications are invited from (a) State-registered nurses who qualified before the April, 1944, examination in England and Wales and the May, 1944, examination in Scotland; (b) State-registered nurses who qualified between April, 1944, and April, 1945, who have, because of previous service in the special fields, been exempted from further service. Applications cannot be accepted from newly qualified and practising midwives, or midwives with recent experience, from nurses holding high administrative and teaching posts, or from certain other groups of nurses with specialised experience or who are employed in hospitals or services where there is a particularly acute shortage of staff.

Applications are invited from women V.A.D.s between the ages of 20 and 40 who hold certificates of proficiency in first-aid and home nursing or comparable qualifications and have had at least six months' experience in a hospital or similar institution.

* "Race Suicide?" By G. F. McCleary. London: George Allen & Unwin. 8. Pp. 194126. Price 6s. net.

AN OUTBREAK OF SMALLPOX IN THE MIDDLE EAST

By J. H. L. EASTON, M.D., M.R.C.P.,

Lieut.-Colonel, R.A.M.C.,

Officer in charge of a Medical Division in a General Hospital

A severe outbreak of smallpox occurred in the early part of 1944, in a Middle East city and port. In the area around were many troops who would come into town on their day or evening off duty; also it was a favourite leave place for personnel of all three Services. It is not surprising, therefore, that the Armed Forces were affected. Sixty-five cases of suspected smallpox among Allied Nations troops were admitted to an isolation unit some miles from the city; of these, 48 were considered to be suffering from the disease, while 17 were excluded and will be mentioned in some detail in discussing the differential diagnosis. The cases were nursed under good conditions by first-class nursing orderlies, to whom several of those most severely affected owe their lives.

It is proposed to review this outbreak under the following headings: (a) results; (b) vaccination; (c) clinical types: (1) the classical attack, (2) haemorrhagic smallpox, (3) smallpox in the vaccinated, (4) smallpox sine eruptions; (d) the leucocyte count in haemorrhagic smallpox; (e) differential diagnosis; (f) treatment.

Results

Table I gives the results in the unvaccinated and vaccinated cases respectively. In the former group are included six who gave a history of previous vaccination but who showed no scars indicating a successful "take." It shows how eleven out of 13 healthy unvaccinated men succumbed to the illness. In the vaccinated group, one of the deaths occurred in a soldier who was successfully vaccinated six days before the onset of smallpox; the other was vaccinated in infancy and supposedly again in 1943. Two haemorrhagic cases were seen with almost no papules on them (the so-called "black smallpox"). There were two recoveries in the haemorrhagic series of eleven, and one out of five confluent cases survived. It is worth recording that six out of the 13 deaths occurred between the fifth and eighth day of the illness, and a seventh on the eleventh day, whilst the remaining six survived until the 14th to 18th day.

Vaccination

The Army medical authorities have laid down the following procedure in vaccination. Every soldier shall be vaccinated every five years. In the presence of an epidemic, everyone who has not been vaccinated within two years will be re-vaccinated. Contacts will at once be vaccinated or re-vaccinated.

In order to determine that immunity is present or that renewed immunity is obtained, medical officers are instructed to detect and record "immediate" and "vaccinoid" reactions by inspecting results on the second and fourth day after vaccination. In the absence of any reaction by the fourth day the vaccination will be recorded as "unsuccessful" and the soldier will be re-vaccinated immediately. Unless successful, vaccination will be repeated up to three times at intervals of four days. An "immediate" reaction consists of a raised or papular area of redness and appears most pronounced between eight and 72 hours. A "vaccinoid" or "accelerated positive" reaction is shown by an area of red-

ness with a raised central papule which usually becomes an immature vesicle; this reaction is best seen between the third and seventh days.

Table II gives the vaccination state of the 48 cases. Unfortunately, it is far from a complete record as regards accuracy (in terms of "immediate" and "vaccinoid" reactions), and it is impossible to form any conclusions about such important matters as the duration of immunity or the value of one, two,

or four scarifications. There are, however, certain points of interest that arise.

(1) It seems certain that immunity does not last longer than two years. Case 18 was vaccinated (one scarification) less than two years previously, and developed confluent smallpox. Several severe cases occurred in men vaccinated only at birth. Case 29 shows that a "primary take" can occur 39 years after initial vaccination.

TABLE II.
(a) UNVACCINATED GROUP

Case No.	Age	Force	Vaccinated	Scars	Result	Type of case	Remarks
4	22	British Army	Refused	—	Recovered	Severe	Not dangerously ill.
5	27	British Army	Refused	—	Died 15th day	Severe confluent	Given 90 c.cm. convalescent serum from Case 1. No effect. Secondary fever.
6	20	E.A. Forces	?	None	Died 5th day	Haemorrhagic	Purpura; no papules. Skin peeled at death. W.B.C.: 28,000.
9	27	E.A. Forces	Supposed 1941	None	Died 16th day	Severe confluent	Bled from every orifice.
14	21	Royal Navy	No	None	Died 9th day	Haemorrhagic confluent	Skin peeled off. Secondary fever.
19	19	E.A. Forces	?	None	Died 15th day	Confluent haemorrhagic	Not dangerously ill.
26	25	British Army	Supposed 1939	None	Recovered	Severe	Lobster skin.
27	33	Merchant Navy	Supposed 1942	None	Died 8th day	Haemorrhagic	Terminal pneumonia. Secondary fever.
31	23	R.A.F.	Supposed 1942	None	Died 18th day	Confluent	Skin peeled off. Vaccination at birth, 1941, and ten times in 1943. No take.
37	26	S.A. Tank Regt.	Attempted many times	None	Died 8th day	Confluent haemorrhagic	1944 (pay book); says successful.
38	37	E.A. Forces	Supposed 1941; Feb., 1944	None	Died 5th day	Confluent haemorrhagic	Haemorrhagic rash appeared on 6th day of illness.
41	47	Warden of Forces Home	Refused	—	Died 8th day	Confluent haemorrhagic	Penicillin 1,180,000 units. Secondary fever.
48	30	Royal Navy	No	—	Died 14th day	Confluent haemorrhagic	

(b) VACCINATED GROUP

1	37	British Army	Infancy	2 L.A.	Recovered	Moderate	Almost confluent on face; moderate toxæmia.
2	41	British Army	Infancy; 8.10.43	4 L.A.	Recovered	Moderate	No great toxæmia.
3	28	Royal Navy	Infancy; 1943	1 L.A.	Died	Confluent	Died on 11th day.
6	31	British Army	1940, 1943	1 L.A.	Recovered	Mild	Flare-up of chronic bronchitis smallpox very mild.
8	27	Royal Navy	Infancy	2 R.A.	Recovered	Severe	Moderate toxæmia.
10	51	Dockyard (British)	Jan. and Feb., 1944	1 L.A.	Recovered	Mild	Adm. in scabbing stage.
11	32	Greek	1941	1 R.A.	Recovered	Ambulant	B.T. malaria parasites found in blood; hyperkeratosis; secondary fever.
12	24	British Army	Infancy; Jan., 1944	2 R.A.	Recovered	Mild	Dangerously ill; scarring; secondary fever.
18	25	British Army	Infancy; 1940, 1942	3 L.A.	Recovered	Mild	Ambulant.
15	?	E.A. Forces	1941, 1944	2 L.A.	Recovered	Mild	Ambulant.
16	25	E.A. Forces	1941, 1944	1 L.A.	Recovered	Mild	Ambulant.
17	44	British Army	Infancy; Sept., 1942	3 L.A.	Recovered	Moderate	Many spots; little toxæmia.
18	20	Royal Navy	1942	1 L.A.	Recovered	Confluent	Dangerously ill; scarring; secondary fever.
20	20	Royal Navy	Infancy; 1941	3 L.A.	Recovered	Very mild	Cropping; rapid maturation.
21	21	British Army	Infancy; Sept., 1943	2 L.A.	Recovered	Mild	Bullae on face.
22	26	British Dockyard	1942	2 L.A.	Recovered	Mild	
23	?	E.A. Forces	1941, 1944	2 L.A.	Recovered	Mild	
24	38	Royal Navy	1942, 1943	2 R.A.	Recovered	Mild	Moderate toxæmia
25	24	Greek	1942	1 R.A.	Recovered	Mild	
28	41	British Dockyard	Infancy; 2.3.44	2 L.A.	Recovered	Haemorrh. confluent	Primary "take"; successful vaccination 4 days before illness; very ill; scarring ++; W.B.C., 25,000; secondary fever.
29	39	British Dockyard	Infancy; March, 1941-1944	2 L.A.	Recovered	Moderate	Primary "take"; successful vaccination 8 days before illness; erythema ++ around spots; thrombosis complicating.
31	28	R.A.F.	1941; March, 1944	No scar 2 L.A.	Recovered	Moderate	Primary "take"; vaccinated 8 days before illness; in poor health because of chronic dysentery; little toxæmia.
32	39	British Army	1939, 1942 (imm. pos.)	4 L.A.	Recovered	Mild	Twelve spots. (Nursing Orderly in compound.)
33	25	E.A. Forces	1942; Feb. and Mar., 1944	2 L.A.	Recovered	Mild	
34	22	E.A. Forces	1941; Feb. and Mar., 1944	2 L.A.	Recovered	Mild	
35	27	E.A. Forces	1944	2 L.A.	Recovered	Mild	
36	29	British Army	Infancy; March, 1944	2 L.A.	Recovered	Mild	
39	25	British Army	Birth; Nov., 1943; Feb. 1944	2 L.A.	Recovered	Mild	
40	26	E. A. Forces	1942; 1944, March	No scar 2 L.A.	Died 14th day	Confluent haemorrh.	Many spots; chickenpox as well; little toxæmia. Vaccinated 6 days before illness; secondary fever.
42	22	British Army	1941; Feb., 1944	1 R.A.	Recovered	Mild	Difficult case; typical chickenpox, except for two lesions on foot.
43	28	Greek Navy	Infancy; 2.3.44	1 L.A.	Recovered	Moderate	
44	28	R.A.F.	Infancy; 1941, unsuccessful; Mar., 1944	4 R.A.	Recovered	Ambulant	Fourteen spots only.
45	27	Greek Navy	Infancy; Jan., 1944	1 L.A.	Recovered	Confluent haemorrh.	Secondary fever for 1 day (96%).

The cases are numbered in the order in which they were admitted to the isolation unit. The first case occurred at the end of January, 1944, and the last at the beginning of May, 1944.

Key to abbreviations used in Table II.—2 L.A. = Left arm (two scars). 4 R.A. = right arm (four scars). E.A. = East African.

Cases 46 and 47 had mild smallpox. Their particulars have been lost in preparation of this paper.

TABLE I

	Type of illness						
	Number	Deaths	Mortality %	Haemorrh. No papules	Haemorrh. and confluent	Confluent	Severe
Unvaccinated	18	11	84.6	2	6	3	2
Vaccinated	35	2	5.7	0	3	2	8
Total	53	13	27.0	2	9	5	10
							29

(2) The table brings out the fallacy of the idea that if nothing occurs at the site of scarification the person is protected. It is probable that if five unvaccinated cases in the present series had been re-examined and re-vaccinated with fresh lymph they need not have died. It could also be argued that in nearly two-thirds of the vaccinated cases a re-examination would have indicated the need for a further attempt.

TABLE III

Case No.	Interval between vaccination and onset	Previous Vaccination	Severity of Illness
29	8 days	Infancy—successful	Moderate.
31	8 days	Infancy—no scar	Moderate.
40	8 days	1942—no scar	Confluent. Haemorrhagic. Death.
28	4 days	Infancy—successful	Confluent. Haemorrhagic. Recovery.

(3) There were four cases in the epidemic which were admitted with a primary "take" from vaccination during the incubation period. Table III shows what effect it had on their illness, depending on the interval between the date of successful vaccination and the onset of symptoms of variola. It will be seen that vaccination must be performed as soon after contact as possible for any immunity to develop. The longer it is delayed the less protection is afforded. After seven days it will have little or no effect on the severity of the attack.

(4) Case 37 was vaccinated ten times in 1943 by a keen South African medical officer. Vaccination had also been attempted in infancy and in 1941 without success. This must be a very rare occurrence for which no obvious explanation is forthcoming.

Clinical Types

The Classical Attack.—It is not proposed to describe fully the already well-known features of variola. Backache is such a prominent symptom in the pre-rash period that, especially in the presence of a local outbreak, isolation is often possible at this stage. Severe backache with pyrexia is not a common symptom in diseases met with in the Middle East, apart from variola and acute anterior poliomyelitis. The importance of the distribution of the rash became more evident as the epidemic proceeded, and it was agreed that the following points would enable a correct diagnosis to be made in nearly every case: (a) the face and head are affected more than elsewhere; (b) the back is affected more than the chest or abdomen; (c) the distal parts of the extremities, including the hands and soles, are affected more than the proximal, whilst the axillae are left clear; (d) the upper half of the body is more affected than the lower; (e) the palate, gums, tongue, and conjunctiva are frequently the site of spots.

The lesions do not appear simultaneously, and it may be 36 hours before the rash has fully appeared. In this early period, "cropping" may be suggested, but by the third day of the rash all spots are almost in the same stage of development. True "cropping" does not occur in the unvaccinated. A pseudo-cropping is very common in the vaccinated cases, because of the quickened rate of maturation. The elements are all of the same size, and are circular (as opposed to vari-cells); the vesicles quickly become tense and hemispherical with no crenation around; umbilication is common. They are of a dulled milky colour due to the deep-set position of the spots in the dermis (as opposed to the glistening shiny spots of varicella, which are more superficial). The seed-like feel to the finger of the spots on the palms and soles is characteristic. In manual workers and among men who wear no boots, where the skin is greatly thickened, no papules or vesicles may be apparent for several days, which fact must be borne in mind in diagnosis. As the pustular stage develops, much hyperaemia and oedema of the skin occur, especially on the face; the eyes become closed, the nostrils blocked, and the lips swollen, making it difficult to keep clean the also affected tongue and palate. When the scabs form they fall off and are not so adherent as in chicken-pox. On the hands and feet, however, the lesions persist for two or three weeks and are the cause of the "hold-up" in discontinuing isolation. In the severe cases the pustules coalesce under the thick horny layer of the soles, forming an abscess which bursts and the entire layer comes off.

The secondary fever occurred only in six cases. Sulphathiazole was given in full doses to all severe cases, and at the first it was thought to be preventing the secondary rise in temperature, but these six developed it in spite of the drug. The impression obtained was that sulphathiazole did have some effect in lessening the severity of the pustular stage.

Haemorrhagic Smallpox.—The two types have been seen in this outbreak, the so-called "black smallpox" and variola pustulosa. The first case of the former was seen early in the epidemic in an East African soldier, and was diagnosed by me as acute leukaemia. He had high fever, an ulcerative stomatitis, enlarged spleen, purpura of the bathing-drawers area, and a white cell count of 27,000 per c.mm. with differential: polymorphs, 33.5%; eosinophils, 0.5%; lymphocytes, 54%; monocytes, 3%; immature cells, 9%. No papules were seen at any time. Just before death, large bullae formed on his chest and neck, and when the skin peeled off raw areas covered with punctate haemorrhages were left. At post-mortem examination, the bone-marrow appearances bore no resemblance to those of leukaemia. The formation of bullae occurred in two other cases and may be a help in diagnosis, as it is not seen in leukaemia.

Case 27 presented the more typical picture. His skin all over was a dull-red colour (lobster skin); his sclerae were pink, with subconjunctival haemorrhages as well; there was a large purpuric area around the pubis extending down the thighs and up towards the umbilicus; at the periphery were many punctate haemorrhages, suggesting that the whole area was made up of such confluent petechiae. On the right thigh were two or three raised spots with a small vesicle on one of them. He had haematuria and bleeding from the rectum. His gums, palate, and tongue were covered with a dirty white film. His spleen was palpable. His white cell count was: total, 18,600 per c.mm.; polymorphs, 42%; transitional neutrophils, 2%; lymphocytes, 41.5%; monocytes, 7.5%; immature cells, 7%. His general condition deteriorated rapidly although his mind remained clear to the end; his skin became more swollen, especially in the face region, and he died on the sixth day from the overpowering toxæmia, without the development of any recognisable complications.

Case 14 was an example of variola pustulosa. His confluent rash (which covered not only the skin but also the sclerae, tongue, gums, and palate) was associated with bleeding from the mouth, ears, nose, urethra, and rectum, and haemorrhages into many of the vesicles. By the ninth day, when he died, the pustular stage had just been reached, and, with the oedema of the skin and mucus membranes, he presented a terrible appearance.

Smallpox in the Vaccinated.—There are certain obvious points about these cases, such as the mildness of the illness, depending on the degree of protection by vaccination; but the following observations are worthy of record and are perhaps not generally known.

- The distribution of the rash is essentially the same, however mild the illness.
- The elements of the rash mature very rapidly, so that vesicles are seen on the second day of the rash, and in many cases pustulation was hardly noticeable and scabbing followed immediately the vesicular eruption. In several, the scabs had fallen off by the 14th day.
- Spots are seen in different stages of development at the same time; this is not due so much to "cropping" as to their varying speed of development. It is important to bear this in mind in diagnosis.
- In the unvaccinated the prognosis depends on the extent of the rash; a confluent or nearly confluent case means a

dangerous and long illness. In the vaccinated, however, several cases were seen who had a profuse rash and whose early toxæmia abated so that convalescence had set in by the 14th day.

(e) The erythema surrounding a vesicle is often extensive, making difficult the distinction from generalised vaccinia in a recently vaccinated man.

Case 21 developed six large bullae on his face where the initial papules had been; the appearance suggested a bullous impetigo. On the other hand, Case 21 produced a marked hyperkeratosis in the scabbing stage, suggesting multiple warts.

Variola sine Eruptione.—This is a well-recognised clinical entity occurring in well-protected persons coming into contact with smallpox. Twelve orderlies nursed in the isolation compound during the epidemic. Five of these developed this contact fever. The incubation period varied from the fifth to the twelfth day after first contact with the patients, four cases occurring between the tenth and twelfth days. The onset was sudden, with fever, headache, usually backache, and general malaise. The duration of the fever lasted from four to ten days. One orderly developed a patch of pleuropneumonia at the right base. The white cell count was within normal limits in all cases. Several instances of this illness have been reported from the Middle East. The benign virus pneumonia appears to be the only common complication.

Leucocyte Count in Haemorrhagic Smallpox

The white cell count in smallpox is well known, but in the haemorrhagic variety the picture is different. The following counts from four cases show several points of resemblance and contain features which have been described by the physicians of past generations as being of common occurrence in cases of haemorrhagic smallpox—though they do not indicate that they are specific to smallpox more than to other haemorrhagic exanthemata. The prominent features are a moderate leucocytosis, which may chiefly involve the granular or the lymphoid series; abnormal cells of the Türk type, not unlike the glandular fever cells (these are noted as "immature cells"); nucleated red cells, apparently in a degenerate condition; and a low platelet count associated with imperfect clot-retraction. Sternal puncture (Case 7) showed a cellular marrow with a predominance of myelocytes.

Case 7.—R.B.C., 4,490,000 per c.mm.; Hb., 92%. W.B.C., 27,000 per c.mm.—polymorphs, 33.5%; eosinophils, 0.5%; lymphocytes, 54%; monocytes, 3%; immature cells, 9%. Platelets, 92,000 per c.mm. Thirty-two normoblasts seen among 200 white cells.

Case 27.—R.B.C., 4,830,000 per c.mm.; Hb., 95%. W.B.C., 18,600 per c.mm.—polymorphs, 42%; transitional neutrophils, 2%; lymphocytes, 41.5%; monocytes, 7.5%; immature cells, 7%. Twenty-six normoblasts seen among 200 white cells, with nuclear pyknosis and granular degeneration of cytoplasm. Platelets very scanty, and those seen appear larger than normal.

Case 37.—W.B.C., 15,000 per c.mm.—polymorphs, 64%; eosinophils, 3%; lymphocytes, 29%; monocytes, 4%. Seven normoblasts in 100 white cells. Platelets approximately 50,000 per c.mm.

Case 38.—R.B.C., 4,080,000 per c.mm.; Hb., 63%. W.B.C., 17,700 per c.mm.—polymorphs, 70%; metamyelocytes, 6%; myelocytes, 2%; lymphocytes, 19%; monocytes, 1%; immature cells, 2%. Platelets, about 25,000 per c.mm. Twenty normoblasts seen in counting 100 white cells; many have bizarre nuclei and faint stippled cytoplasm.

Differential Diagnosis

Seventeen cases were sent to the isolation unit from outside labelled as smallpox, but were found not to be suffering from the disease. They comprised:—

- 5 varicella in East African soldiers.
- 2 R.A.F. varicella. (Both fell ill together. One of them had fungus infection of the feet with blisters which were thought to be variola vesicles. Clinically typical varicella.)
- 1 ecthyma. (He had two pustules on forearm which were thought to be smallpox.)
- 2 scabies.
- 1 vaccinia (generalised).
- 1 tonsillitis with acne.
- 1 syphilide. (Flat-topped papules with smallpox distribution. Kahn 3 plus.)

- 1 meningococcal septicaemia. (Diagnosis never proven but clinically very suggestive. Responded to sulphapyridine.)
- 1 measles in an E.N.S.A. artiste.
- 2 measles in Greek Navy.

These are mentioned to illustrate the difficulties in diagnosis that have beset medical officers. Admittedly, seven of them must have been examined in a bad light or hurriedly, owing to pressure of work. Most of them need no comment. Chickenpox certainly was a source of difficulty in one East African unit which was afflicted with both diseases at the same time. Many presented themselves on sick parade in the scabbing stage with about 20 scabs on them, and a correct diagnosis could not certainly be made in about four. Chickenpox should not be difficult to distinguish if the history of onset, the distribution of the rash, and the appearances of the individual spots are carefully considered. An East African soldier with a rash consisting of flat-topped papules distributed mainly on the face, chest, back, and distal extremities looked like an early variola at first, but he had no fever or symptoms of malaise. His Khan was 3 plus.

Measles has been the most difficult disease to differentiate in the early stage, especially when language problems prevent a careful history. The rash certainly resembles the early smallpox as regards appearance and distribution, and in one case it was necessary to isolate for twelve hours before the diagnosis was obvious. The catarrhal signs, Koplik's spots, and the macular rather than the papular element of measles should settle the diagnosis at once.

Treatment

There is no specific remedy at present, and careful nursing and attention to detail still remain the secret of helping the serious case to weather the illness. Penicillin was given to one fatal confluent haemorrhagic case of a patient who came in at the end of the epidemic. There was no doubt in the minds of the attendants that a fatal issue within the first week was prevented and that it helped the patient to survive until the 14th day, but the toxæmia was not controlled by it except apparently during the first 48 hours. He received 1,180,000 units. He was admitted on the second day of the rash, delirious and collapsed, and appeared to be a hopeless case, but, following penicillin 15,000 units three-hourly, intramuscularly, he made a dramatic improvement which was maintained for three days. The drug made no difference to the development or intensity of the rash; the overwhelming toxæmia gradually increased again and he succumbed without complications on the 14th day.

Sulphathiazole was given in full doses to all the ill patients. It was begun at various stages in the attack in different cases, but as the epidemic progressed it was given as soon as the man was admitted. To begin with, it was withheld until the approach of the pustular stage in the severe cases, and given early to the haemorrhagic and confluent ones. It seemed to make little difference when it was given. One could conclude from experience that:—

- It prevented complications. Only one fatal case showed terminal pneumonia clinically. Crepitations at the lung bases were notably absent in all the severe cases. Case 29 developed venous thrombosis of the leg and was the only other complication.
- It diminished the pustular eruption and thereby probably lessened the tendency to deep scarring afterwards. Two cases were intolerant to the drug, and in them the pustules were much more tense and took longer to heal. On the other hand, two very severe cases on discharge had very marked scarring, especially of the skin of the nose. Two cases had the pustular condition of the soles mentioned previously, but there was no breaking down or ulceration in any other case.
- It had no effect whatever on the toxæmia. The fatal cases all seemed to die from the overwhelming character of the illness.

Convalescent serum (90 c.cm.) was given to Case 5 from Case 1 without any appreciable effect. Xylol (90 minims per diem in milk) was given to several of the cases. It was not well tolerated and did not appear to influence the course of the illness.

Summary

An epidemic of smallpox in a Middle East city and port which affected Allied Nations troops, is described.

The results, the vaccination state, clinical types, differential diagnosis, and treatment are given, together with a paragraph on the leucocyte count in haemorrhagic smallpox.

The importance of re-examination after vaccination is stressed, and the policy of the Army Medical Directive in this procedure is endorsed.

Evidence that satisfactory immunity does not last more than two years is given. In treatment, neither penicillin nor the sulphonamide group of drugs controls the profound toxæmia of severe variola, but it seems justifiable to state that sulphathiazole tends to prevent complications, lessen the pustular eruption, and so diminish scarring.

My thanks are due to Major S. C. Buck, R.A.M.C., Pathologist to the hospital, for his notes on the leucocyte count in haemorrhagic cases. I am indebted to Brigadiers Evan Bedford and E. R. Boland for permission to publish this article.

THE MANAGEMENT OF MUNICIPAL HOUSING ESTATES

The following Memoranda, prepared by the Society of Medical Officers of Health, have been submitted to the Central Housing Advisory Committee.

Allocation of Houses

1. Local authorities for the first time provided houses on a large scale after the last war, at a time of great pressing demand. The tenants from all classes were therefore accepted. Later, municipal houses were specifically for those living in unsatisfactory housing conditions, and still later for those in overcrowded premises. To-day, and in the immediate future, again, the demand will come from all classes.

2. This insistent demand will everywhere exceed the supply, and will necessitate that provision be made that not only the arguments in favour of an applicant should be taken into account, but also those aspects which might weaken the applicant's claim.

3. In any system of points, then, not only should the positive factors be considered and points added, but points should be deducted for favourable circumstances—e.g., an applicant might be granted points because he occupies a part only of a house, but he should lose points if his rooms are reasonably commodious enough for his family's needs.

4. Not unnaturally, Service men will be allocated points, in most instances these depending on years of service, and in some cases something extra for overseas service. This allocation should surely be made as an endeavour to take into account the extent to which he has been prejudiced in efforts to find housing accommodation by being in the Service, either because he had to give up his house, or has been absent, or is still absent, and so unable to find that accommodation which might have been, or is now, or about to be, available.

5. Heavy scoring for long residence is felt to be justifiable, if only because an applicant who has for long lived in one district, and particularly if he works in the district, will stand very little chance of having his case considered by any other local authority.

6. It is felt, however, that it is impossible to devise any points scale which can give due regard to the claims of those whose justification for a house is based only on public health grounds. While one case of overcrowding can be weighted against another on a scale of points, it is difficult to determine the weighting of those points as against such factors as length of residence or period of war service, for example. Still more difficult is it to evaluate on the same scale premises with poor amenities and lack of convenience with, say, the presence of a known open case of tuberculosis.

7. It is suggested that any allocation of points should be used only as a preliminary sieve for those responsible for the allotting of houses to determine which case shall have the priority of allocation. Similarly, a public health department should put their own case in some order of priority, for this purpose dividing them into such groups as premises of poor

standard, overcrowding, families with young children, invalids, etc. Cases of respiratory tuberculosis, in particular, should receive special consideration. In the actual allocation of houses the merits of all those headings must be judged. It is only in this way, it seems, can those whose need is greatest on public health or community welfare grounds receive their due consideration in the days to come, when it is possible that other points of view not so fundamentally clamant might be given a priority. The point of view of the public health officers should always be sought and given full consideration, when final priority is decided upon.

8. Care should be taken that mere liability to pay an economic rent should never in itself give any priority; the cases must be decided only on the family's need for housing accommodation. Full use might be made of the powers of authorities to charge differential rents.

9. If the local authority be assisting in the distribution or re-distribution of housing accommodation, as it must, that authority should have some say in the new allocation of premises which have been vacated by families housed, or rehoused, by the local authority.

Management

It will always be necessary for the closest touch to be kept between those managing the estates and the tenants if only to ensure that the unsatisfactory tenants are not inconveniencing their neighbours. While the visits can most conveniently be paid by the same officer who acts as rent collector, such officer should be a trained official experienced in the sociological aspects of housing management and concerned with much more than mere cash receipts or even the maintenance of the fabric. From the viewpoint of those engaged in public health, the Octavia Hill system has much to commend it.

Limiting of Tenancy

While those who occupy Council houses should, of course, be entitled to some reasonable security of tenancy, the very insufficiency of accommodation justifies dispossession into smaller accommodation as children grow up and leave the home. The tenants of Council houses have had the accommodation when they needed it and for their years of tenancy at a subsidised rent. Consideration, then, should be given to the question of whether a house should be re-allocated when it could rehouse a larger family than now in occupation.

Site of Allotted Houses

Large districts will have a number of housing estates widely separated. Applicants for new houses should be made fully aware of what accommodation is likely to become available within a period of, say, six months, so that they will not in their anxiety to have a new house accept the first offered, when by waiting a short period they might have one in an area much more convenient from the point of view of proximity to the wage-earner's work. This would help to prevent the vacation of new houses within a short time of the new tenancies and avoid some of the very extensive travelling, perhaps right across the town, by wage-earners. Wherever possible, a new housing estate should be under the administration of a single local authority.

Civic Consciousness

Those laying out an estate should determine whether it is to become merged in the district to which it is attached, or whether it is to become a separate township. Its fate depends very largely on its size, and also on its degree of attachment to the parent district. If it is hoped it will become merged, it should not be too large an area. If it is to be a separate entity then every assistance should be given as early as possible for the provision of those facilities which make a collection of houses a town, as until these are provided an estate remains a collection of houses. Attention should be paid to neighbourhood planning. Proper siting of schools, churches, clinics, places of entertainment and refreshment, community centres and so on should be considered very early. A sense of isolation or detachment of the new residents is an important factor in promoting the uneasiness or unrest and disappointment which has led to many returning to their old homes or comparable surroundings shortly after moving, and this, too, after waiting probably for so long and with so much hope for a new life.

Summary

1. The primary need will be for housing accommodation for the homeless who so far have had no accommodation in which to begin family life, or who have had only inappropriate accommodation (mostly because of overcrowding). This demand will come from a much larger group and of higher economic status than the groups rehoused pre-war. Any points system can do no more than indicate some priority. The final allocation of housing accommodation must be made after due consideration of several factors, and two of these factors certainly must always be public health and community welfare.

2. The importance of some training in sociology as regards housing management should be a necessary attribute of the person collecting rents.

3. As long as scarcity exists, families should be moved, say, after five years if they now occupy accommodation which would house appropriately a larger family. While sub-letting may be an immediate expediency, it should be permitted only in specially selected cases.

4. Final allocation of housing accommodation should be made with considerable deliberation and not in haste, and have regard to such essentials as place of work.

5. Very early consideration should be given to siting and the layout of new housing estates, particular thought being given to fostering a community life.

STANDARDS OF FITNESS OF HOUSES

The Central Housing Advisory Committee has asked for the views of the Society of Medical Officers of Health on the following questions:—

(1) Can further guidance as to standards of fitness be given within the terms of the Housing Acts and, if so, what form should such guidance take?

(2) Is any further guidance needed for (a) rural, and (b) other local authorities?

(3) To what extent, if any, does the standard of fitness for urban houses differ from the standard for rural houses?

(4) Would it be well for the Ministry to revise and re-issue the definition of a fit house given in the *Manual of Unfit Houses* of 1919?

(5) If so, in what respects does this definition need revision in the light of present circumstances?

(6) Is there any other form of general guidance which should be given?

The Council of the Society has given careful consideration to the above questions and submits the following memorandum for the information of the Central Housing Advisory Committee.

Existing Standards of Fitness

Section 9 of the Housing Act, 1936, is as follows:—

"Where a local authority, upon consideration of an official representation, or a report from any of their officers, or other information in their possession, are satisfied that any house which is occupied, or is of a type suitable for occupation, by persons of the working classes is in any respect unfit for human habitation, they shall, unless they are satisfied that it is not capable at a reasonable expense of being rendered so fit, serve upon the person having control of the house a notice requiring him, within such reasonable time, not being less than 21 days, as may be specified in the Notice, to execute the work specified in the Notice and stating that, in the opinion of the authority, those works will render the house fit for human habitation."

Section 11 of the same Act empowers a local authority to order the demolition of a dwelling-house which is unfit for human habitation and is not capable at a reasonable expense of being rendered so fit. Section 25 of the Housing Act, 1936, which applies to groups of houses, specifies "that the houses in that area are by reason of disrepair or sanitary defects unfit for human habitation, or are by reason of their bad arrangement; or the narrowness or bad arrangements of the streets, dangerous or injurious to the health of the inhabitants of the area, and that the other buildings, if any, in the area are for a like reason dangerous or injurious to the health of the said inhabitants."

The Interpretation Section (188) defines sanitary defects as including "lack of air space or of ventilation, darkness, dampness, absence of adequate and readily accessible water supply, or sanitary accommodation or of other conveniences, and no adequate paving or drainage of courts, yards or passages." Some further guidance on standards of fitness is also given in Section 188 (4), which states "in determining, for the purposes of this Act, whether a house is fit for human habitation, regard shall be had to the extent, if any, to which by reason of disrepair or sanitary defects, the house falls short of the provisions of any by-laws in operation in a district or of any enactment in any local Act in operation in the district dealing with the construction and drainage of new buildings and the laying out and construction of new streets or of the general standard of housing accommodation for working classes in that district."

Observations.—This last section raised doubts as to whether new building by-laws dealing with the construction and drainage of new buildings could be applied as a standard of the fitness of existing houses. That these new building by-laws can be so applied has now been established by case law on the subject. Here it must be pointed out that building by-laws can lay down minimum standards for the height of rooms but do not prescribe any minimum floor areas for habitable rooms. Moreover, this section causes a further difficulty in its reference to "the general standard of housing accommodation for working classes in that district." Should the general standard be low in any particular district the owner could claim that the items asked for under Section 9 of the Housing Act, 1936, existed in only a few working-class houses and the local authority would be prejudiced in their case. A further difficulty will be introduced by the erection of prefabricated (sub-standard) houses under the temporary housing scheme, as for example by the reduction in ceiling height to 7 ft. 4½ in.

Housing Manual

It is realised that it will be impossible to apply new housing standards to all existing houses immediately, but this does not mean that such new standards cannot now be defined. On the contrary, it would be an advantage to owners and to local authorities if the requirements of a fit house, as given in the *Manual of Unfit Houses*, issued by the Ministry of Health in 1919, were revised and re-issued at once, but that the full operation of such new standards should be postponed for a period of, say, ten years. There is a tremendous amount of sanitary defects and gross disrepair in existing houses with which local authorities will now have to deal, and it would not be possible to apply all improved standards at once. A ten-years interval would allow time to overcome the more serious ravages of five and a half years of war, and would give owners and local authorities ample warning of the more stringent requirements to be subsequently imposed.

Since the original date of publication of the above *Manual* the ideas of health departments and housing departments of local authorities, and of the general public, have made considerable progress and the standards of amenities of dwelling-houses have risen. A revised definition of a fit home is urgently needed. Although it may not be possible to define the term "disrepair," it should be made clear that this term will include such items as sagging roofs and bowed or buckled walls and other structural conditions which are evidence of deterioration rather than lack of repair.

Question and Answer

Replying to the specific questions put forward by the Central Housing Council, the Society of Medical Officers of Health consider:—

(2) Is any further guidance needed for (a) rural, and (b) other local authorities?

Yes. It will be of great convenience, will carry weight with local authorities, with owners, with the public, and should assist the judicial authorities.

(3) To what extent, if any, does the standard of fitness for urban houses differ from the standard for rural houses?

There are no fundamental differences between urban and rural houses. There may not at present be a piped water

supply in all rural areas; drainage may present local difficulties and electric lighting may not have reached every part of the country, but a new *Manual* would assist in setting up a standard and it should be a uniform standard.

(4) Would it be well for the Ministry to revise and re-issue the definition of a fit house given in the *Manual of Unfit Houses* of 1919?

It is desirable that the Ministry of Health itself should give such further guidance and this might well be done by the revision and re-issue of those portions of the housing manuals of 1919 and 1938 which laid down standards of fitness for houses. (It is believed that it would be an advantage to sanitary inspectors and medical officers if a section could be added to this manual giving details of the more important legal decisions relating to the repair or condemnation of unfit houses. The suggestion is also made that a copy of the new model by-laws, Series 4, should be included in the revised manual when it is re-issued.)

(5) If so, in what respects does this definition require revision in the light of present circumstances?

As explained above, it is considered desirable that revised standards should be issued now for application in two stages.

Minimum requirements of a fit house.—This should be the subject of immediate enforcement. A fit house should be (1) free from dampness; (2) properly ventilated; (3) properly drained and provided with adequate sanitary conveniences and a sink, and suitable arrangements for disposing of slop water; and (4) in sound structural condition and in good general repair; and should have (5) a satisfactory internal water supply; (6) adequate natural lighting, including the lighting of passages and staircases; (7) adequate accommodation for washing clothing; (8) adequate facilities for preparing and cooking food; (9) a separate well-ventilated food store; (10) provision for the storage of house refuse and fuel; (11) adequate facilities for personal ablutions.

Other Standards.—In addition to the above the following standards should be laid down now, but their enforcement should be postponed for a period of ten years:—

(1) Where there is an adequate piped or private supply of water and sewerage or adequate private sewerage provided, a bath and separate bathroom be required, together with a domestic hot-water system, an internal water closet and, convenient to this, a fixed wash basin.

(2) Every house should have a separate wash-house or scullery.

(3) Adequate cupboard accommodation should be provided for utensils, clothing, etc.

(4) In addition to heating arrangements in the living room and kitchen, at least one bedroom should be provided with a fireplace.

(5) Where practicable, secondary means of access should be provided.

(6) Where practicable, that separate access to each bedroom be required.

(7) Where electricity or gas is available, that one such form of artificial lighting be required to be laid on to every habitable room.

Definition of "Dwelling House"

(8) Is there any other form of guidance which should be given?

This question is largely covered by the replies given above, but it is desired to call attention to a serious problem which exists in many large towns. In London and other cities there are large numbers of big houses which have descended in the social scale and are now let off in floors or sections to working-class families. These apartment houses are to some extent controlled by by-laws made under Section 6 of the Housing Act, 1936, or previous enactments, but the control is not sufficiently strict and the power to make by-laws is not sufficiently wide. The definition of "dwelling house," given in Section 6 of the Housing Act, 1936, only applies to Part IV of that Act and cannot be invoked for the enforcement of Section 9. The Ministry of Health can require a local authority to make by-laws under Section 9, and these may be limited

to houses let-in-lodgings, but the powers so given are restricted and do not go nearly far enough. It would be of the greatest assistance to local sanitary authorities if the definition of a house, as given in Section 68, could be applied to Part I of the said Act.

THE GROUP CARE OF YOUNG CHILDREN OUTSIDE THE HOME

[The Royal Commission on Population, having invited the Society of Medical Officers of Health to submit a Memorandum from its Maternity and Child Welfare Group on the above subject, the President, on May 22nd, 1945, submitted the Group's Memorandum as follows].

In reply to the query by the Royal Commission on Population, as to what part day-nursery provision might play in the relief of strain for young mothers, we wish to say in the first instance that we agree that a woman with children under five years of age requires time for shopping, doing the washing and countless other tasks unhampered by the continuous demands of small children, and that she should have some time available to enjoy the companionship of her husband. She should also have the opportunity, if she so desires, of making her contribution to the life of the community outside her own home. The claims of the child, however, should come first and the question must be asked: "Is the provision of day-nursery accommodation, from the child's point of view, the best method of relieving strain on the mother?" The answer to this is to some extent dependent on the age of the child and on the amount and quality of any domestic help which may be available.

Children under the age of three years, whose mothers do not go out to work, should be cared for in their own homes. If the mother requires assistance to relieve her from the strain of her domestic duties, then this is best provided by a good home help. If such a home help is not available, then the placing of the child for short periods in a nursery can be considered only as second best to a good home. It should be emphasised that there are dangers in congregating large numbers of small children together either in nurseries or in nursery schools, although we recognise these dangers can be minimised by good and well-equipped premises, with staff—medical, nursing and educational—adequate in numbers and efficiency.

For children over the age of three the solution would appear to be the nursery school, in suitable premises and with good equipment. The staff must be adequate and well trained, especially in the laws of hygiene and prevention of the spread of infection. A period of years is likely to elapse, however, before there can be full nursery-school provision for all children between the ages of three and five. Moreover, nursery school teachers prefer that their children should be in regular daily attendance; they do not welcome a floating population. These two factors will limit for a time the number of children who can be admitted to nursery schools. In the case of children in this age group for whom accommodation cannot be found in nursery schools part-time day-nursery provision serves a useful purpose.

In our view, extensive provision of day-nursery accommodation for the children whose mothers do not go out to work should not be embarked on to the exclusion of efforts to obtain a sufficient supply of efficient home helps. The limited provision of part-time day nurseries, provided they were adequately housed, staffed and equipped, would make a contribution to the relief of strain on the mother. We would emphasise that the mere change of name from nursery school to day nursery does not make the provision of suitable premises, adequate equipment and efficient staff any less important. Finally, we would add that it is possible that in the future crèches and day nurseries may be provided by private firms for use either by their customers or by their employees. If so, then they should be registered with, and inspected by, the local authority, and should be required to conform with certain recognised standards of premises, staffing and equipment.

NEWS AND SUMMARY

LOCAL AUTHORITIES AND THE WAR

The Minister of Health has expressed his warm thanks for the work done by local authorities since the outbreak of hostilities; and for the contribution so made to the victorious conclusion of the war in Europe. In the circular conveying his thanks, the Minister says: "The part that local authorities have played in the nation's war effort is one which they can rightly regard with deep pride. Always under the handicap of severe shortages of man-power and materials, and often under the fire of the enemy, they have successfully operated major war services in addition to maintaining the normal services on which the stability and productive power of the Home Front have depended."

The supreme Commander of the Allied Expeditionary Force in a recent message to the Prime Minister said: "One of the highlights of the history of this conflict will be the stamina, courage and determination displayed by the British population in the performance of its indispensable duties under the constant threat of the most terrifying weapons the enemy could devise."

Not only the areas subject to direct attack by the enemy have had to shoulder immense burdens. Through the dispersal and expansion of war industry, and the movement of members of the priority classes from the evacuable areas, responsibilities in connection with national defence have been distributed over the country as a whole and among all types of authorities, from the largest to the smallest, and have often involved severe strain on essential services.

Of the services for which he is responsible to Parliament, the Minister particularly mentions the following:—

The Emergency Hospital Scheme; the movement, billeting and welfare of mothers and children and old people; the post-raid services, including the feeding and care of the homeless in rest centres, etc.; the repair of war-damaged houses; the maintenance of the public health and water supply services; the billeting of transferred war workers and of refugees from the Channel Islands and the Continent; the establishment and management of war-time nurseries, and emergency maternity homes and hostels.

CORRESPONDENCE

DARLINGTON TUBERCULOSIS CARE COMMITTEE

To the Editor of PUBLIC HEALTH

SIR,—This committee has completed its 26th year's work. Its continuance is an essential link in the work being undertaken by local authorities to combat the scourge of tuberculosis by protecting the healthy as well as helping the afflicted. The money subscribed to the committee's funds enables us to help stricken families in providing extra nourishment, clothing, footwear, bedding, invalid chairs, rent subsidies, and domestic assistance for incapacitated mothers; 915 cases have been helped altogether, and during the past year 13 new applications were dealt with. The committee spent £499 13s. 10d. and received valuable assistance from the Soldiers' and Sailors' Buffet Fund, who expended a further £73 12s. 3d. on tuberculous cases with an ex-Service connection.

The scheme, which receives the approval and financial support of the Council, is carried out voluntarily, and all money subscribed goes to the benefit of patients. Every case is thoroughly investigated by the medical officer, ward visitor, and committee.

We appeal to you to help us in this work of relieving the afflicted and protecting the healthy. It is more important now than ever before that the committee's work should not be curtailed in any way due to lack of funds. More can be done voluntarily than statutorily in the matter of this relief.

The Acting Hon. Secretary, Dr. F. A. Paul, will be glad to receive gifts of beds, bedding, boots and shoes, clothing, etc., the need of which is urgent, for distribution to necessitous cases. The parcels should be specially marked "For the Tuberculosis Care Committee," and addressed to the Tuberculosis Dispensary, Health Centre, Greenbank, Darlington.—I am, etc.,

A. J. BEST, Chairman.

F. A. PAUL (Acting Hon. Secretary).

A. J. SHAW (Hon. Treasurer).

The Annual General Meeting of the School Medical Service Group will be held at the London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1, on Friday, July 20th, at 3 p.m.

BOOK REVIEWS

Battle for Health. By STEPHEN TAYLOR. 1944. London: Nicolson & Watson. Pp. 128. Ninety-one photographs and 13 coloured charts designed by the Isotype Institute. Price 5s. net.

Dr. Stephen Taylor is an accomplished journalist, and knows how to get the best out of facts and figures in this attempt to teach the layman something about disease—and about health. But like most people who write books on health, he finds himself compelled to make what is in essence a negative approach to the subject. This book would have been more fittingly called "Fight against Disease." The assumption appears to be that if disease is conquered something called health will have a chance to flourish. We yet know very little about health, and have not got very far beyond the stage at which we think of it only in terms of absence of disease. Bernard Shaw put a new twist to the tag, *Mens sana in corpore sano*, by observing that without health of the mind health of the body is impossible. A glance at the world as it is would suggest that an accurate definition of mental health would be hard to come by; and medical psychologists are still largely preoccupied with exploring the abnormal, and still tend to see the normal mind as something that has more or less freed itself from the tangles of mental disorder.

The current phrase, "Positive Health," begs a large number of questions and answers none. It represents an aspiration, an ideal towards which a profession engaged in the fight against disease seeks after. But there is a danger that doctors may delude the public as well as themselves that there are standards of "positive health" which are known and which can be reached.

In the 13 pictorial charts in colour which so admirably illustrate an admirably illustrated book, there are three on diphtheria and four on venereal disease, one of these being a map covering two pages to illustrate how syphilis spread to the old world. This indicates the drift of the book, which is really about disease. This perhaps accounts for a curious and striking omission—namely, no mention of mental health. There is, for example, no reference to child guidance clinics. There are reproductions of portraits of ancient and contemporary figures in the history of medicine, and even illustrations of a stethoscope and the surgeon's instruments. There are, for example, portraits of William Withering, Lænnec, and Harvey Cushing. There is one of Pasteur, but not one of Koch. There is one of Pavlov, but not one of Freud.

On the inside flap of the cover we are told that Dr. Taylor gave up practice because he found that "most of the health problems of his patients were not simply questions of a bottle of medicine or an operation, but rather of economics, sociology, and psychology." Those who expect to read a book based on this experience will be disappointed, but we can think of no book that better illustrates for the layman the big communal problem of infectious disease and how to attack it.

Aids to Fevers for Nurses. By J. M. WATSON, S.R.N. 2nd edition. 1945. London: Baillière, Tindall & Cox. Pp. xii + 362. 36 illustrations. Price 4s.

A few years ago Baillière, Tindall and Cox started a series of handbooks covering knowledge required of the modern nurse. The writing of the volume, *Aids to Fevers*, was entrusted to Miss Watson, Sister Tutor of the Park Fever Hospital. Produced first in 1939, it has now been revised after two reprints, and brought up to date as a second edition. The introductory chapters are devoted to the General Nursing Council's syllabus, and succeeding chapters to consideration of the infectious diseases and their nursing. A full chapter on chemotherapy is followed by detailed descriptions of the practical procedures mentioned in the text.

The popularity of the book is ensured. The author has kept to her purpose of helping student nurses during their training in the nursing of infectious diseases. The ground is fully covered, the instructions are precise, and the practical experience of the author might be shown by quoting this advice on the treatment of a patient with pneumonia: "The misplaced enthusiasm for routine must not be allowed to interfere with his peace and rest."

OBITUARY

H. J. PHILLIPS, M.D., D.P.H.

We regret to record the sudden death at Southlands Hospital, Shoreham, on June 3rd, after a short illness, of Dr. H. J. Phillips, Medical Officer of Health for Worthing.

Harold James Phillips received his medical education at University College, Dublin, qualifying B.Sc., M.B., B.Ch., in 1920, and taking the M.D. in 1927 and the D.P.H. with honours in 1931. Entering the public health service as Assistant M.O.H., Kent C.C., he became successively Deputy M.O.H. and School Medical Officer for Hastings C.B., and M.O.H., School Medical Officer, and Medical Superintendent of the Isolation Hospital of Ashton-under-Lyne. Finally, in 1938, he succeeded Dr. R. H. Wilshaw as M.O.H., School Medical Officer, and Medical Superintendent of the Isolation Hospital of the Borough of Worthing.

Among his publications were articles on the alkali treatment of scarlet fever and on endocrine disturbances in school children.

Dr. G. H. Pringle (M.O.H., Bridgwater) writes: It was my privilege to work with Dr. Phillips as his deputy in Worthing from early in 1939 until the summer of 1941. His administrative ability and his for organisation were outstanding assets, although his talent was by no means limited to this sphere. As a clinician, Dr. Phillips was at his best at the Borough Isolation Hospital. The outbreak of hostilities brought with it the heavy burden of evacuation, and to add to the difficulties the trend of events meant that Worthing, in a short period, not only ceased to be a reception area, but an official evacuation took place. This sudden change from apparent safety to the danger of a front-line town put a heavy strain on the Civil Defence organisation's casualty services, which had to be rapidly augmented. Thanks to Dr. Phillips, all these difficulties were successfully overcome. As can be expected from a hard worker, Dr. Phillips had no time for slackers, though he always showed the greatest consideration to all members of his staff. In his scanty leisure hours I have happy recollections of an occasional game of tennis in his lovely garden and, even in the dark days of the autumn of 1940, lively discussions on our common hobby of philately. I always look back on my time in Worthing as an education in sound and tactful administration. By the sudden passing of Dr. Phillips I have lost a good friend, and a progressive borough has lost a progressive medical officer of health.

C. V. DINGLE, M.D., D.P.H.

We regret to announce that Dr. C. V. Dingle, who had been Medical Officer of Health of the County Borough of Middlesbrough from 1936 until 1936, died on June 7th at his home at Marton Grove House, Middlesbrough, where he had been living in quiet retirement. Charles Vincent Dingle qualified M.B., B.S. in 1891; he took the B.Hy. in 1896, and the D.P.H. in 1902. After an appointment as Resident Medical Assistant at the City Hospital for Infectious Diseases, Newcastle-on-Tyne, he became M.O.H. for Middlesbrough.

Dr. T. Lloyd Hughes, the present M.O.H., sends the following appreciation: Dr. Dingle was Medical Officer of Health for Middlesbrough from 1898 until 1936 during the period when the foundations of the health services of the town were being well and truly laid. His introduction to the town was at the time of the virulent smallpox epidemic which, raging in Middlesbrough during 1897 and 1898, attacked 1,405 of the townspeople. His previous experience on the staff of the Public Health Department of the City of Newcastle stood him in good stead during this difficult period. From the experience he gained he became one of the foremost authorities on smallpox in the North of England, and he was the author of many special reports on vaccination and smallpox. He was appointed Medical Officer in the Tees Port Health Authority in 1904, and on the establishment of the School Medical Service became the town's first School Medical Officer in 1908. During his term of office, Dr. Dingle tackled the high infantile mortality, with the causative bad housing in Middlesbrough, with great vigour and determination, and was instrumental in carrying through, against much opposition, some extensive slum-clearance schemes in the town. He saw a large part of the town converted from privy middens to the water-carriage system of sewage disposal, and also established the Maternity and Child Welfare service on a most satisfactory basis. On his retirement in 1936, he had seen the Public Health Department grow, through his guidance and inspiration, into a very important and vital factor in the life of the town. He was well loved by his colleagues and staff, for his kindly, courteous and gentlemanly manner, and nowhere was his cheerful personality more in evidence than in the various social functions in the hospitals and other institutions under the control of his department. While mourning the loss of this great pillar in public health work on the north-east coast, we rejoice in the example of the public service rendered so modestly and yet so efficiently.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

COUNCIL MEETING

A meeting of the Council was held at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, London, W.C.1, on Friday, May 25th, 1945, with the President (Professor R. M. F. Picken) in the chair.

There were also present Drs. Cyril Banks, N. D. Begg, G. F. Buchan, W. A. Bullough, J. A. Charles, Sir Allen Daley, Drs. James Fenton, W. M. Frazer, J. M. Gibson, A. S. Hebblethwaite, C. Herington, Katherine M. Hirst, J. Johnstone Jervis, R. H. H. Jolly, R. A. Leader, G. V. T. McMichael, M. Manson, A. Morrison, A. A. E. Newth, R. H. Parry, H. Paul, Virginia Saunders-Jacobs, J. A. Scott, J. A. Stirling, Mr. A. Gordon Taylor and Dr. F. T. H. Wood. The minutes of the meeting held on April 26th, 1945, were approved and signed.

Apologies for absence were received from Drs. Malcolm Barker, J. J. Buchan, G. Lissant Cox, James Ferguson, J. E. Spence, W. Stott and G. McKim Thomas.

REPORT FROM GENERAL PURPOSES COMMITTEE

Dr. J. M. Gibson presented minutes of the meeting of the General Purposes Committee held on May 24th, 1945 (see PUBLIC HEALTH, July, 1945, p. 119), and drew special attention to recommendations defining the policy of the Society in regard to "Communications with External Bodies" as follows:—

(1) That should any Branch or Group receive a communication from an outside body asking for the opinions of or discussions with a Branch or Group such communication should be forwarded to the Secretary of the Society for reply.

(2) If the Secretary, in consultation with the Chairman of Council, or President, or other available officer of the Society, considers the matter urgent, then the Chairman of the Council or President or other available officer of the Society shall be empowered to authorise the Branch or Group to submit their observations to or enter into discussions with the external body concerned; provided that it be an instruction to the Secretary in consultation with the Chairman of Council or President or other officer of the Society, to secure if possible that a member of the Council shall attend with the Branch or Group on the occasion of the submission of their views or in the preparation of their report. The member of the Council to be associated with the Branch or Group should preferably be a member of the Council who does not sit as a representative of the Branch or Group concerned.

(3) The Branch or Group in submitting their views to or entering into discussions with the outside body must clearly explain that their statements represent the views of the Branch or Group only and have not the authority of the Council.

(4) Any views or report submitted by a Branch or Group to an external body in accordance with the foregoing paragraphs must be reported to the next meeting of the Council for their consideration.

The report of the Committee was approved and adopted.

ADOPTION OF CHILDREN (REGULATION) ACT, 1939

Following representations from Dr. J. E. Spence, the Maternity and Child Welfare Group, and the School Medical Group, it was agreed to forward a memorandum to the Lord Chancellor, the Home Secretary and the Minister of Health as follows:—

"The Council of this Society having considered difficulties which have arisen in the working of the above Act desire to submit for your attention the following points:

Although the Adoption Society registers with the registration authority for the district in which the Administrative Centre of the society is situated, there is no restriction on the area to be served by the society, and no check on activities, outside the registration area. In our view the society should be required to notify the welfare authority from whose area the child is removed and the welfare authority in whose area the child is placed. This would avoid fruitless efforts to trace the child and would ensure efficient inspection and appraisal of the conditions in the home in which the child is placed.

At present no training or special experience is required of any person before being employed by an adoption society for the purpose of making any arrangements for the adoption of the children. We are of opinion that these enquiries on behalf of an adoption society should be made by the welfare authorities. The minimum qualifications suggested should be (a) an experienced health visitor, or (b) a trained social worker, with special experience. Each should have had some psychological training if the interests of the child or the adopting parents are to be adequately safeguarded. A medical certificate of

fitness should be obtained for each adopting parent, as well as the medical certificate for the child.

No adoption through either a local authority or a registered adoption society should be made final without a probationary period, except under very special circumstances. The length of the probationary period should be at the discretion of the Court. There should be some ruling as to the number of adoptions any one third party can arrange within a given period. It is difficult to decide at what stage an active third party should register as an adoption society.

Placing by the mother or near relative should be notified to the local authority. No children should be received into the proposed adoption home, until the home has been approved by the local welfare authority. It should be made obligatory when an adoption is being legalised by a Court of Law that they should receive a report from the child protection visitor, of the appropriate welfare authority. Notification of the placing of a child for adoption should be made by the person receiving the child as well as by the participants. The age of the foster parents should be taken into consideration in relation to the age of the child to be adopted.

There are many instances where it seems inadvisable for the natural parent to have the child's new address, which at the present time is shown on the Notice of Hearing, sent to the mother by the Court. The law of inheritance as it affects these children might receive further consideration. Some arrangements should be made so that the new certificate supplied should not show that the child is adopted. Should an interim order be granted there appears to be no onus on the Court to see that the case is completed.

It is our experience that infants under four weeks of age who are to be placed for adoption have sometimes been sent apart from their mothers on long journeys to the home of the adopting parents. We consider that this is a most undesirable practice, and that, if it were possible, it should be made illegal. The Council also adopted the following resolution forwarded by the Yorkshire Branch:—

"That representations should be made to the Minister of Health urging him to amend the Adoption of Children (Regulation) Act, 1939, and Regulations made thereunder, so as to provide that when a child is being transferred from the area of one welfare authority to another with a view to adoption the authority in whose area the child is for the time being residing should be notified of the proposed transfer and the transfer should not take place until a certificate has been issued by the responsible official of that authority stating that the child is in a fit state for transfer, consideration having been given not only to the physical condition of the child, but also to weather conditions and the length of the journey to be undertaken."

Arising out of a further resolution forwarded by the Yorkshire Branch it was agreed that as full information as possible regarding the paternity of a child should be made available for the adopter before completion of the adoption.

SCALE OF SALARIES

In reply to an enquiry from the British Medical Association in regard to procedure in negotiations for future scales for the Public Health Service, it was decided to recommend the Association that such negotiations should be conducted on the same basis as those preceding the Askwith Memorandum—i.e., with representatives of local authorities and an independent chairman.

FUTURE OF PAEDIATRICS

A memorandum on this subject drafted by the Maternity and Child Welfare Group at the request of the Paediatric Committee of the Royal Society of Medicine was referred for observations from the School Medical Group before adoption by the Council.

THE ROYAL COMMISSION ON POPULATION

The President stated that he had approved a memorandum prepared by the Maternity and Child Welfare Group at the request of the Royal Commission on Population on the Group Care of Young Children outside the Home. This was one of those matters which could not await submission to Council and he had accepted the responsibility of authorising the memorandum. (The memorandum will be found on p. 116).

It was agreed to ask Dr. Jean Mackintosh and Dr. I. G. Davies to draft a memorandum on aspects of the population problem which should be the subject of any evidence the Society might wish to offer to the Royal Commission.

ACADEMY OF MEDICINE

A resolution from the Yorkshire Branch in reference to the place of preventive medicine in the proposed Academy of Medicine was referred for further consideration at the next meeting of the General Purposes Committee.

REGISTER OF SPECIALISTS

A resolution from the Southern Branch in regard to the position of public medical officers in regard to the proposed Register of Specialists was referred after discussion to the Special Committee on Post-Graduate Education of Medical Practitioners in Public Health, which had already given consideration to this matter.

NOMINATION OF PRESIDENT FOR SESSION 1945-46

After consideration of nominations received from the Branches the Council selected by ballot Professor J. Johnstone Jervis for nomination as President of the Society for the coming session.

LIFE MEMBERSHIP

On the nomination of the West of England Branch, Dr. Ernest Ward was elected to fully-paid life membership of the Society. Dr. Ward has been a Fellow of the Society since 1920 and served as President for the Session 1936-37.

REPRESENTATION OF THE SOCIETY

Dr. Virginia Saunders-Jacobs was elected to the Child Guidance Council, now the Provisional National Council for Mental Health; Dr. Evelyn McGregor was elected to serve with Dr. James Fenton on the National Baby Welfare Council.

GENERAL PURPOSES COMMITTEE

A meeting of the above Committee was held at Tavistock House, Tavistock Square, London, W.C.1, on May 24th, 1945, with Dr. J. M. Gibson in the chair.

There were also present Drs. Cyril Banks, W. A. Bullough, James Fenton, C. Herington, R. H. H. Jolly, A. A. E. Newth, Hugh Paul, Professor R. M. F. Picken, Drs. Virginia Saunders-Jacobs, J. A. Stirling and F. T. H. Wood.

Apologies for absence were received from Drs. N. D. Begg, G. F. Buchan, J. J. Buchan, G. Lissant Cox, James Ferguson, W. M. Frazer, J. W. Hunter and A. Massey.

Communications with External Bodies.—After discussion of recent occasions when Groups of the Society had been directly approached on matters of urgency by external bodies, the Committee approved for submission to Council a memorandum defining the procedure to be adopted in such cases. (See Proceedings of Council, May 25th, 1945.)

Planning and Building of Hospitals.—A letter was received from the General Nursing Council urging that in the planning and equipment of hospital buildings due consideration should be given to conditions necessary in a Training School for Nurses. An accompanying memorandum indicated the standard desired and pointed out in what respects a great many hospitals failed to reach that standard.

Management of Municipal Housing Estates.—The Committee approved (and recommended) to Council the memorandum for submission to the Central Housing Advisory Committee (see p. 114). It was agreed that special thanks be accorded to Dr. Caryl Thomas, Dr. A. G. Morison and Dr. G. Hamilton Hogben for their assistance in drafting this memorandum.

Standards of Fitness in Housing.—A memorandum was approved by the Committee and recommended to the Council for submission to the Central Housing Advisory Committee (see p. 114). It was emphasised that the recommendations made applied only to existing housing, and must not be taken as indicating the standards which should be required in new houses.

Thanks were expressed to Dr. R. H. H. Jolly, Professor J. Johnstone Jervis, Dr. J. A. Scott and Dr. W. B. Stott for preparation of the memorandum.

Treatment of School Children.—In reply to an enquiry from a medical officer of health regarding arrangements for the treatment of school children and the terms of Education Circular No. 29, the Committee agreed that the duties of local education authorities are defined by the Education Act, and that it must rest with them to decide what arrangements, if any, must be negotiated with hospitals and private practitioners.

Vaccination of Infants.—The Minister of Health forwarded for the observations of the Society a memorandum addressed to his Medical Advisory Committee regarding the compulsory basis of the Vaccination Acts. The Advisory Committee expressed itself in favour of terminating compulsion as proposed in the Ministry memorandum. After discussion it was agreed to recommend to the Council that as infant vaccination had ceased to be effective compulsion should no longer be enforced in the absence of a viable major, but that the machinery for the provision of free vaccination, and the supply of government lymph should be maintained and improved.

Administration of Municipal Hospitals.—Replying to an enquiry from a Fellow of the Society, the Committee recommended for

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approval by the Council the principle that, as the primary purpose of a hospital is the treatment of the sick, the medical superintendent should have the supreme responsibility in all matters, but that he should have adequate assistant staff to relieve him of non-medical details of management and administration.

The Society of Medical Officers of New Zealand.—The Committee welcomed a proposal from members in New Zealand that their local society, recently established, should become a branch of the parent Society. The Acting Executive Secretary was directed to send a cordial reply to this suggestion, indicating the various arrangements which would be necessary to comply with the Society's Articles of Association, and promising consultation with a member of the New Zealand Society who would shortly be visiting London.

Comprehensive Training of Nurses.—The President reported that the Society had been approached by the Royal College of Nursing, the Women Public Health Officers' Association, the Royal Sanitary Institute and others in reference to the draft proposals for the comprehensive training of nurses recently issued by the General Nursing Council. Professor Picken suggested that it was advisable to invite representatives of these bodies to confer on these proposals, especially as affecting the training of health visitors. A report in this connection would be available early in July and, subject to the approval of the Committee, he proposed to call a conference shortly afterwards. The President's suggestion was approved and commended for adoption by the Council.

Annual Luncheon.—It was agreed that in place of the Annual Dinner held by the Society prior to the war, a lunch should be arranged at the Holborn Restaurant for Friday, September 21st, at 12.30 for 1.0 p.m. The maximum attendance must be restricted to 150, and any tickets available for private guests would be allotted according to priority of application. The cost of tickets would be 10s. 6d. inclusive of gratuities, but exclusive of wines. The President undertook to nominate the official guests. A meeting of the Council would be held on the morning of September 21st, so other members of the Society will be asked to make application for luncheon tickets before the end of August. The President, Dr. G. F. Buchan and Dr. James Fenton were appointed to be responsible for the toast list and other arrangements, and Dr. Fenton was thanked for the success of his preliminary labours at a time when it is difficult to secure accommodation for large parties in London restaurants. The Committee then adjourned.

ORDINARY MEETING

An Ordinary Meeting of the Society was held on Friday, May 25th, 1945, with the President (Professor R. M. F. Picken) in the chair.

Election of President for Session 1945-46.—The President reported that in accordance with Article 17A of the Society's constitution, the Council had selected Professor J. Johnstone Jervis for nomination to that meeting for election as President of the Society for the coming session. The election of Dr. Jervis was approved by acclamation.

Election of Fellows.—The following having been duly nominated, were elected to membership of the Society:—

As Fellows:—Becher, Charles Anthony, M.A., D.M., B.Ch. (OXON.), D.P.H.; Bland, Fred M., M.R.C.S., L.R.C.P.; Cochrane, George, M.B., Ch.B. (GLAS.); Cole, Violet Elizabeth, M.R.C.S., L.R.C.P.; Davies, John Rodyn, M.R.C.S., L.R.C.P.; D.M. & R. O'Donnell, Annie Margaret, B.Sc., M.B., Ch.B. (MANCH.); D.C.H.; D.C.O.P.; Edge, Margaret, M.B., Ch.B. (LIV.); Gaye, Alan Willis, B.A., M.B., B.Sc., D.P.H. (CANB.); M.B., Ch.B. (MANCH.); Gratton, Anne Rothwell, M.B., Ch.B. (MANCH.); Hapton, James W. K., M.R.C.S., L.R.C.P., D.P.H.; Harvey, F. C. R., M.B., B.Sc., M.B., B.Ch. (WA.), D.P.H.; Mackenzie, Melville Douglas, M.D. (LOND.); Mary, B.Sc., M.B., B.Ch. (WA.), D.P.H.; Mackenzie, Melville Douglas, M.D. (LOND.); D.P.H.; D.M. & R. E.; Maclean, Stephen Adam, M.B., Ch.B. (GLAS.), D.P.H.; Macdonald, Michael Francis, M.B. (DUB.), D.P.H.; Mudie, Elizabeth Caroline, L.R.C.P.; O'Connor, Margaret, M.R.C.S., L.R.C.P.; D.P.H.; O'Sullivan, Percival Vivian, M.D., B.Sc., L.R.C.P. (EDIN.), D.P.H., F.R.C.P.S.; Rose, Robert M., M.B., Ch.B. (EDIN.), D.P.H.; Smith, John, M.D., D.Sc., F.R.C.P. (LOND.); D.P.H.; Sutherland, Gladys, M.D., M.B., B.A. (DUBL.); Stark, Vida, M.D. (GLAS.); B.Sc.; Thomson, Gertrude Hilda C., M.R.C.S., L.R.C.P.; Tomlin, Eric Harrell, M.D., Ch.B. (LOND.), D.P.H.; Tracy, Susan Mary, L.R.C.P., L.R.C.P., D.P.H.; Veitch, Vera Cecil, M.B., Ch.B. (EDIN.); Villiers, Henry, L.R.C.P. & S. (IRE.); Watson, Jessie Robertson, M.B., Ch.B. (OT. AND.), D.P.H.; Whyte, Elizabeth Constance, M.B., Ch.B. (GLAS.); Williams, Doris S., M.B., Ch.B. (EDIN.); Williamson, Henry, M.B., B.Sc. (GLAS.), D.P.H.

As Associates:—Penney, John Kirk, L.D.S., R.F.P.S. (GLAS.).

Nominations were reported for election at the next ordinary meeting.

The meeting then adjourned.

TUBERCULOSIS GROUP COMMITTEE

President: Dr. H. Salpy.

Secretary: Dr. R. L. Midgley.

A meeting of the Tuberculosis Group Committee was held at the rooms of the Society on May 11th, at 10 a.m. The President occupied the chair, and there were 13 other members present.

The minutes of the previous meeting were read and signed. The revised salary scale was considered. Some anxiety was expressed that tuberculosis officers might be placed in the lower scale, but

Dr. Lissant Cox felt the footnote to the document would be a safeguard.

It was reported that the General Purposes Committee had decided to advise the Council to increase the capitation grant from 1s. to 2s. 6d. per head for the Groups. If this increase is confirmed, it was decided that the Hon. Secretary should prepare a statement on the objects and activities of the Group for circulation to all members, and to medical officers of health to distribute to tuberculosis officers who were not yet members.

In a discussion on the "Association of Municipal Specialists," information was given that tuberculosis officers are considered to be municipal specialists and would be represented.

A report of the previous meeting of the Joint Tuberculosis Council was given. The Council representative presented his report and was thanked for the hard work he had put in.

A resolution proposed by Dr. Townsend and seconded by Dr. Edwards was "that all medical officers shall be entitled to have travelling and subsistence allowances paid for reasonable visits to professional meetings, hospitals, and similar activities necessary to keep them abreast of current advances in their work." This was carried unanimously.

SOUTHERN BRANCH

President: Dr. Catherine Avery (M.O.H., Winchester R.D.C.).
Hon. Secretary: Dr. H. C. Maurice Williams, O.B.E. (M.O.H., Southampton).

A meeting was held at Southampton on April 6th.

Dr. C. H. Avery was in the chair, and there were ten members present.

The minutes of the meeting held on March 27th, were approved as correct and signed by the Chairman.

Members considered the revised draft of salary scales, based on recommendations from branches and groups, and from individual members of the Society.

A photographic display has been produced for use in the educational campaign on venereal diseases. This display tells frankly what the venereal diseases are, how they are caused, what are their effects, and why skilled treatment should be obtained at the earliest possible stage. It has been prepared for private showing and is intended only for those who wish to see it, and for members of the sexes separately. The display is being offered by the Ministry of Information to factories throughout the country. Copies, on free loan, are available to local authorities through the Central Council for Health Education.

The Central Council for Health Education has now a team of technical officers whose services are available to local authorities, educational institutions, and voluntary organisations for help in their health education work. This team consists of medical men and women with specialised experience in different health fields, two biologist-educationalists, and an educational psychologist. Those who would care to make use of the services of these lecturers should apply to Dr. Robert Sutherland, Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

The Joint Tuberculosis Council at a meeting on May 12th, discussed several matters of interest. On the recommendation of the Joint Education Committee (upon which the Council and the National Association for the Prevention of Tuberculosis are represented), the Council approved the draft constitution for a Tuberculosis Educational Institute. This institute will arrange courses, lectures and demonstrations for the education of doctors, nurses, almoners, and social workers in tuberculosis. It will, it is hoped, act as an information centre in all matters connected with tuberculosis education, and will recommend candidates for N.A.P.T. scholarships. The institute will suggest lines of research in tuberculosis, and will generally facilitate and encourage the study of the subject in Great Britain by visitors from overseas. It will work in co-operation with University postgraduate centres and will give them all possible assistance. The Joint Education Committee also recommended the N.A.P.T. to award two £50 scholarships for health visitors, and two scholarships of similar amount for student almoners.

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Single copies 2s. 6d. post free.

"Public Health" is the Official Organ of the Society of Medical Officers of Health and a suitable medium for the advertisement of official appointments vacant in the health service. Space is also available for a certain number of approved commercial advertisements. Application should be made to the Executive Secretary of the Society, at Tavistock House South, Tavistock Square, W.C.1. Telephone: Euston 3923. Telegrams: Epidaurus, Westcent.

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EDITORIAL

Frontiers in Public Health

The world of to-day is greatly concerned with frontiers, and neat lines are being drawn between various zones of occupation. In all spheres of post-war organisation, however, when the Japanese are finally defeated, international co-operation will become more vital to world peace than the skilful arrangement of boundaries. "The achievement of co-operation in the extension of public health is of more far-reaching consequence than the prevention and control of disease alone, as harmonious effort and exchange of ideas for attainment of this objective provide a sound basis for friendship and understanding." It was in this spirit that Major-General George C. Dunham, President of the Institute of Inter-American Affairs, opened a discussion* at the annual meeting of the American Public Health Association in October, 1944. He traced the evolution of international health organisations from 1851, when plague and yellow fever were responsible for the first attempt of governments to agree on common action against disease. He then showed how the nations of the western hemisphere had begun (in 1942) to undertake co-operative public health measures, with a programme extending to 18 of the 20 American Republics, in addition to the United States. The scheme goes far beyond the prevention of epidemic disease, and includes the construction of hospitals and clinics, the development of health departments, the improvement of water supplies and other sanitary measures, the prosecution of the war against parasites, and the education of the public in health. In some areas the co-operative service has been able to conduct training and research centres for doctors, nurses, laboratory workers, and sanitary engineers. More than 300 persons from the southern countries, for the most part physicians and engineers, have already been given opportunities for special study in the United States, and all the participating countries have been eager to take their share in the scheme.

The subsequent discussion ranged from China to Peru as one speaker after another presented the problems of his own region in their international setting. Dr. Szeming Sze, representing the Far Eastern Unit of the Health Division, U.N.R.R.A., gave a vivid account of the special problems of the Asiatic countries where vast populations are struggling for bare existence. The Chinese and Indian birth-rates are 36.6 and 44.4 per 1,000 of the population respectively, and the death-rates 25.7 and 38.4. The infant mortality rates correspond with those of England at its worst period of uncontrolled industrial expansion. "To meet these conditions," Dr. Szeming Sze said, "the medical and health facilities are most inadequate, and indeed subminimal. In western countries one thinks of one doctor for 1,500 of population, and five

hospital beds per 1,000 of population as minimal standards. In China, for example, there is one doctor for 40,000 and one hospital bed per 10,000 of the population." What can an international health organisation do about this? The cynical suggestion that the existing order of things is the right way to keep the population within bounds does not deserve commentary. It is not even true. Dr. Szeming Sze has some tentative proposals: (1) The starting point should be provision for summoning conferences of directors of national public health services in the Far East. (2) The most urgent need is a uniform and accurate system of vital statistics, and frequent reports on communicable diseases. (3) Emergency field missions should be established to deal with sudden disasters, and flying squads would have to be set up, with equipment suitable for use in the Far East. (4) Training and proper distribution of medical and nursing staff, such as has been provided by the Rockefeller Foundation, is the most important single measure of policy, and there should be some system of international grants-in-aid to develop and maintain these services.

These suggestions are modest enough, in all conscience; and one wonders whether much more drastic action could not be taken by nations that have been able to direct so much effort and skill to the world war. Would it not be possible to declare war against ill-health in the Far East? Perhaps, as Dr. Melville Mackenzie pointed out in his address, the almost limitless scope of the international medical field in itself creates a danger—that of attempting to cover too much ground superficially; and pressure to obtain results rapidly may be a contributing factor to shallow work. Moreover, the effort to proceed along lines that are politically and socially too far in advance of what is possible may lead only to dismay and disillusionment. It is essential for any international organisation to work through the existing health services, with the full collaboration of their directors, health officers, and laboratory workers. It is difficult to prevent an international health organisation from becoming unwieldy owing to its sheer size; probably a division into large regions would offer the best prospects of success, but each region would need to look for leadership—for many years to come—to one of the more advanced Powers. U.N.R.R.A. has been given the task of mobilising the resources of the Allied Nations to bring relief to the victims of world war in the form of food, shelter, clothing, medical supplies, and other restorative measures. It is an executive body, but its policy is necessarily directed towards meeting immediate needs. It will have to be superseded by a permanent health organisation, planned in such a way that there will be no interval, no lapse between the termination of U.N.R.R.A.'s work and the coming of the other. But it will not be a direct descendant.

A final point of great importance was summed up with admirable clearness by Dr. Karl Evang, the Norwegian representative: "I would like to emphasise," he said, "that public

* Amer. J. publ. Hlth., 1945, 35, 89.

health problems are fundamentally the same all over the world. At the same time we must not forget that a public health organisation is a *superstructure*. It is quite true, of course, that malaria is malaria, that tuberculosis is tuberculosis wherever you meet it in the world. However, the problem created by malaria, by tuberculosis, by infant mortality will be quite different in different parts of the world, changing with the social and economic conditions of the countries. Public health cannot stay aloof, far from the fighting world and its people. Public health administrators must be willing to work from the very bottom, where the problems are, even if that means resistance and difficulties of economic, religious, political, or other nature. Public health is not primarily a science in the strictest sense of the word; it includes science, builds upon science. Its function is to apply the results achieved by science to the population. The task is to bridge the gulf between what is possible to do now—in preventive and curative medicine—and what is actually being done now. . . . The time has come for an international crusade against tuberculosis and venereal disease. Is not this also the time to create an international institute and school for public health education?"

The Maternity Service

A record in attendance was set up by the conference on maternity and child welfare, held at Friends House, London, in the last days of June. About one thousand were present, very many of them representing local authorities, others being from voluntary organisations. A succession of papers, discussions, and film showings was carried through with great success. The first such conference was held nearly 40 years ago, and since then it has been almost an annual event, only interrupted for two years by the first world war, and for two years by the second. The Minister of Health (Mr. H. U. Willink), who was President of the conference, found time to come from the hustings to give a survey of achievements during the war and of projects in hand. He began by repeating the heartening vital statistics, comparing 1940 with 1944, during which period there has been a marked rise in the birth-rate and an equally marked fall in infant and maternal mortality, stillbirths, and neo-natal deaths.

Mr. Willink then went on to tell the story of what his department had done during the war to provide milk and vitamin supplements for mothers and children, to establish emergency maternity homes and ante- and post-natal hostels, and to set up day nurseries for the children of war workers. The more permanent aspects of maternity and child welfare had not been forgotten during the war. The campaign for diphtheria immunisation had been actively continued. The results so far secured, said Mr. Willink, were good. Not only was the death-rate from diphtheria falling: this might be due to a variety of causes—even in a period in which diphtheria has greatly increased in other countries—but there was a striking difference of incidence and a still more marked difference, which no one could explain away, in the death-rate between protected and unprotected children. However, the standard of immunisation necessary for the control of the disease had not yet been reached, and the Minister hoped that no efforts would be slackened. He also mentioned that a leaflet on rickets is shortly to be published by his department for the use of doctors and others professionally concerned with the care and treatment of children.

On the subject of increased maternity accommodation, Mr. Willink said that during the war about 5,500 new beds had been made available, but the proportion of institutional confinements had increased from about one-third to one-half of the total number, and the demand for accommodation had been by no means satisfied. As building restrictions allowed, a larger number of beds was being arranged for in the areas where the problem was more urgent. The Minister said he wished he could authorise larger projects, but their claims would be kept to the front when progress in housing allowed some labour to be released for other purposes. He also announced that it was proposed to extend from six to nine months the training given to health visitors.

The principal discussion at the conference on administrative topics was on the unity of the maternity and child welfare

services. Dr. Nora Wattie, senior child welfare officer, Glasgow Corporation, declared that no one could be satisfied with the present arrangement. In most areas the maternity and child welfare ante-natal clinics were not staffed by personnel who had a hospital connection, and very often after appointment the medical staff no longer engaged in obstetric practice. She argued that the ante-natal clinics and the maternity beds should be administered as a single service in the health department, and hospital as well as clinic practice should be among the duties of the medical officers of the clinics. She also thought that while there were obvious advantages in making the maternity unit part of a general hospital, with a share in common services and facilities, it should not be administered as such. It should be administered as part of the general maternity service, and regarded not as a hospital but as an element in the process of childbearing.

Miss G. L. Reed, who said that she had been asked to speak on behalf of the College of Midwives, put in a strong plea for confinements at home where possible. Midwives, she said, believed that all domiciliary midwifery should be covered by specialised hospital services for use when and where necessary, but these services should not invade the normal to such an extent as to lower the position of the mother as a member of the family and the partner in the home. Twenty years ago they were told that soon all women would be confined in hospital; but hospital confinements had increased only during the war, when attendant members of the family were not available to help in the home during the confinement. Admittedly, with our present health standard, there would be a large percentage who would need to be confined in hospital, but she pleaded that family unity should be encouraged as much as possible by confinement at home, which had been for generations the privilege of everyone from the Sovereign to the cottager.

Dr. Alan Moncrieff, who to some extent was voicing the views of the British Paediatric Association, declared against the further development of the "women and children only" type of hospital, though he was in favour of unity if it meant the university hospital serving all departments of medicine and surgery, with its maternity unit topographically adjacent to the paediatric department. He also disliked the idea of divorcing ante-natal work from the actual conduct and supervision of labour and the puerperium. In London, for example, ante-natal work was largely undertaken by the borough councils, and the actual midwifery arrangements by the county council. He added that if medical officers were to be responsible for seeing the mother through the whole process of childbearing they must be specialists in their subject. Similarly, the medical officer should undertake the care of the newborn, of the older infant, and of the school child, so that there would be continuity; but here again specialisation would be necessary. The division in the past between hospital paediatricians and child health medical officers had been unfortunate, and a unity in this part of the work seemed to Dr. Moncrieff of very much greater importance for the health of a community than the preservation of the unity of the medical officer's work on maternity and child welfare. The training of medical officers of health in the future must allow for early specialisation in one or other of these major branches.

D.D.T.

What Sir Arthur Shipley called the minor horrors of war may easily become a major menace to the health of armies and over-run civilian populations, especially if the ammunition for attacking lice, fleas, flies, and mosquitoes runs short. Early in the present war we were cut off from the supplies of insecticides of vegetable origin. When the Japanese captured the centre of the quinine industry, we were fortunately able to fall back upon the excellent synthetic substitute, mepacrine; but there was no synthetic substitute for pyrethrum or derris. Derris is the dried rhizome of climbing plants which are indigenous to Malay and the East Indies, a centre of supply which fell to the Japanese. Pyrethrum is obtained from the dried flower-heads of *Chrysanthemum cinerarioefolium*, grown in many parts of the world. Japan was one source, and Kenya another.

For the past ten years or so energetic search has been made for insecticidal compounds, and it was a most fortunate chance that a substance which had been synthesised in 1874 was in 1940 found to be highly toxic to insects and, for all practical purposes, harmless to man. In the latter year the Swiss firm Geigy A.G. took out a patent for D.D.T., the initials derived from the generic name, dichlor-diphenyl-trichlorethane, or, more specifically, 2,2-bis (parachlorophenyl) 1,1,1-trichlorethane. Both British and American scientists got to work on this substance in 1942, and it soon became evident that D.D.T. might supplement, or even replace, the insecticides generally used against the mosquito and the louse. The combined work of entomologists, chemists, and medical men in this country and in the U.S.A. soon established the value of this remarkable chemical, which was then produced on a large scale. Against the louse, undergarments can be impregnated with D.D.T., and the large-scale dusting of a lousy population was instrumental in bringing to an end the typhus epidemic in Naples last year: as many as 73,000 people were thus treated in one day. Against malaria—or rather against the mosquito—an emulsion of D.D.T. can be sprayed over the waters where the insects breed. The adult mosquito can be destroyed by spraying the air and the walls and ceilings infested by mosquitoes. D.D.T. has been shown to be toxic to bees, and unwanted colonies have been exterminated by D.D.T. powder discharged from a dust-gun. It is thought probable, therefore, that it will be equally effective against wasps and hornets. As an insecticide its action is rather slow, but varies with different insects. Mosquitoes and flies, for example, are usually killed in a matter of minutes; lice exposed to D.D.T. may live for several hours, while bugs and roaches may live a day or two after contact. D.D.T. has also been found effective against rat fleas, and has recently been used in Malta to prevent the spread of plague from four cases diagnosed there.

In considering the possible toxic properties of D.D.T. it must be remembered that commercial grades of this substance may contain anything up to 30% of impurities. Tests of its toxicity to laboratory animals have been carried out. The symptoms of poisoning are hyperexcitability and tremors, depression, and finally death. In chronic poisoning there are loss of appetite and weight and increased susceptibility to infection. Although the symptoms are nervous, *post-mortem* examination showed that the principal toxic action was on the liver. A case of D.D.T. poisoning in man has been recorded, but in this case the exposure was far more intense than would be met with in ordinary circumstances. To all intents and purposes D.D.T. is safe as a dry powder and in dilute (0.5%) solution. Anyone exposed to repeated contact with concentrated solutions would have an early warning of poisoning in the symptom of anorexia. Although in the usual application the symptom of poisoning are slight, the search for a suitable antidote is being energetically pursued: possible substances for this purpose are calcium salts, dilantin, and urethane.

It is possible that a limited service of British Restaurants mainly for the use of industrial and commercial workers will continue in peace-time. It is also likely that some commercial caterers will open similar restaurants after the war. In 1943 the London Council of Social Service, having these possibilities in mind, surveyed some 40 communal restaurants in London, and issued a report on their findings. A sequel to this first report has now appeared under the title *Community Restaurants in Design*, price 2s. 6d. post free, from the London Council of Social Service, 7, Bayley Street, London, W.C.1. It is written by F. Le Gros Clark, with designs by L. H. Bucknell and Ruth Ellis. Two plans are illustrated, either of which is considered suitable as a community restaurant standing by itself, or as part of a larger building. The layout of dining-hall, kitchen, storage accommodation, staff accommodation, and cloak rooms is described, and an estimate is made of the cost.

At a meeting of the Council of the Royal Sanitary Institute held in June, Mr. David M. Watson, B.Sc., M.Inst.C.E., was elected Chairman of the Council to take office on October 1st, 1945.

THE RISK OF PULMONARY INJURY IN BOILER CLEANING

BY

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In recent years a number of reports have suggested that boiler cleaners develop a disabling fibrosis of the lungs. Boiler cleaning comprises two distinct operations—boiler-scaling, that is scraping off the water deposit from the interior of the boiler; and flue cleaning, that is removing the dusty products of combustion from the flues.

Since Cooke (1930), as the result of a *post-mortem* examination first recorded pneumoconiosis in a Lancashire colliery boiler cleaner, four other series of cases have been described, all in this country. Williams (1931) at Cardiff reported six cases among men working on marine and stationary boilers. Two reports have come from the Hull Tuberculosis Dispensary (Dunner, 1943; Dunner and Hermon, 1944) describing the radiological signs in 17 boiler-scalers working on the docks. Todd and Rice (1944) reported another case. Harding, Todd, and McLaughlin (1944) have made a detailed study of a man who had been employed as a boiler-scaler all his working life, and suggest that the abnormal shadows seen in the x-ray film of boiler-scalers' chests are due partly to areas of silicotic fibrosis and partly to deposits of iron dust. All these reports cover selected cases referred for examination because of symptoms suggesting a pulmonary disease, and as such give no clear indication of the numbers of men who might be involved in any big works.

The Chief Inspector of Factories, in his Annual Report for 1944, refers to the fact that in recent years attention has been called to the irregular and excessive hours worked by young persons employed in the scaling and cleaning of boilers aboard ships in harbour and wet dock, and also to the dirty nature of the work. It is noteworthy that his report makes no reference to any evidence showing that boiler-cleaners are especially prone to sustain damage to their lungs.

We became interested in boiler-cleaning because it seemed to us that a further investigation might yield another clue to the problem of why men get silicosis. We are specially interested in whether small amounts of fluorine exert any influence. The Great Western Railway Company granted us permission to investigate the men employed in their Swindon Works, and assisted us to make a complete examination of all the different processes in the operation of boiler plant at all stages. Our report is confined to men who had all been engaged whole-time in cleaning boilers on the plant used for generating steam power and heat for the works. We examined all the men who are at present engaged on this plant and several others who now work elsewhere. The men had been cleaning water-tube boilers of the Stirling pattern and large furnace flue boilers of Lancashire type. None was cleaning locomotives. Nine men were available for examination. Every man gave a detailed account of his health and occupation and had a radiograph taken of his chest. Eight of these men considered themselves healthy, but one (Case 9), complained of indigestion and breathlessness on exertion. They all seemed fit and well. Our findings are summarised in the table (Table I).

In none of the radiographs were definite signs of reticulation or nodulation seen. In several cases there were some exaggeration and increased density of the normal striations of the lung, and there were occasional markings which did not seem to conform to the normal vascular tree. Only one case (Case 6) showed slight but definite abnormalities: these were faint, ill-defined opacities scattered in the lung fields; they looked like the faint mottling so often seen in cases of chronic pulmonary catarrh, and did not in any way resemble the appearances described and illustrated by Williams or Dunner. These

TABLE I

Case	Age	Childhood Complaints	Other Illnesses	Industrial Record	Symptoms	Radiographic Findings	Comment
1	51	Chest troubles.	Pneumonia 1 year ago. Gastric ulcer.	Baker, 6 to 7 years. Groom, 1 year. Army, 4½ years. Boiler maker's labourer. Boiler cleaning (13 to 14 years). Crane driver (present occupation).	Short of breath if he catches a cold.	Slight exaggeration of the normal linear markings.	This man may have sustained pulmonary damage when he was a baker. (One of us saw a recent necropsy on a man who had been a baker for over 25 years. He had severe pulmonary fibrosis.) The question of whether bakers sustain pulmonary injury is unsettled.
2	46	Bronchitis.	None.	Cinema operator (2 years). Lathe hand (steel). Army, 4 years. Boiler cleaner (13 to 14 years). Engine coupling (2 years). Charge hand, boiler plant, 10 years (present occupation).	Occasional cough; "chronic bronchial catarrh".	No lesion seen.	There is no evidence to show that this man has sustained any harm.
3	40	None.	None.	Groom, 5 years. Army, 4 years. Unemployed, 1½ years. Boiler cleaner, 10 years. Engine charginman, 20 years (present occupation).	None.	No lesion seen.	There is no evidence to show that this man has sustained any harm.
4	52	None.	Slight mustard-gas poisoning (affected chest). Pneumonia.	Rug and carpet trade, 12 years. Army, 4 years. Concrete breaking, 20 years. Boiler cleaning, 4 years (present occupation).	Occasional sickness; no chest trouble.	No lesion seen.	There is no evidence to show that this man has sustained any pulmonary injury. We are uncertain whether his occasional indigestion is important. (See Case 1.)
5	63	None.	Conjunctivitis.	Apprentice to blacksmith, 1 year. Farming (Ontario), 12 years. Navy, 21 years (stoking and boiler cleaning). Farming, 5 years. Building, 3 years. Boiler cleaning, 21 months (present occupation).	None, other than eye troubles.	No lesion seen.	No evidence of pulmonary injury. Conjunctivitis probably aggravated by dust.
6	32	None.	None.	Rolling mills, 1 year. Boiler cleaning, 4 years (present occupation).	Winter coughs.	Slight exaggeration of the normal markings. Emphysema. Faint scattered mottling.	Changes in the radiograph probably due to "chronic pulmonary catarrh".
7	42	None.	None.	Farm, 7½ years. Clay sorting, 17 years. Erecting static water tanks, 1 year. Boiler cleaning, 3 years (present occupation).	None.	Slight exaggeration of the normal markings.	There is no evidence to show that this man has sustained pulmonary injury.
8	62	None.	None.	Builder (boiler trade), 18 years. Army, 4 years. Boiler cleaning, 25 years.	None.	No lesion seen.	There is no evidence to show that this man has sustained pulmonary injury.
9	44	None.	None until 15 years ago when he had gastric ulcer (operation).	Gardener, 1 year. Army (age 15), 4 years. Boiler cleaning, 10 years. Lighting-up and steaming test engines, 5 years. Coupling and uncoupling, 10 years (present occupation).	"Dyspepsia" 15 years short of breath. Cough.	Slight exaggeration of normal markings.	There is no doubt that this man has been partially disabled on account of dyspepsia and shortness of breath for 15 years, but there is no conclusive evidence to show that these symptoms are attributable to boiler cleaning.

findings seem to prove that the men employed as boiler-cleaners at this works do not necessarily sustain severe harm to their lungs. One man (Case 9) aged 44 years, who had done ten years of boiler-cleaning, is certainly not as fit as he should be. He has not been engaged in any other occupation which might have damaged his lungs, and he himself attributes his symptoms to "scruffing."

Comment

We are at a loss to explain the severe changes which have been recorded by other workers. If the findings they describe are due to boiler-cleaning, it may be that different methods are practised in other works, or perhaps there are significant differences in the physico-chemical constitution of the scale and flue dust in different boilers. If this problem is to be solved a number of factors require critical examination in every published case. These include (1) the worker's previous industrial record; (2) whether he is engaged part-time or whole-time as a boiler cleaner; (3) his health record, in-

cluding periodic radiographic examinations; (4) the type of plant and the physico-chemical composition of the scale and the flue dust; (5) the precautions which are observed.

Worker's Previous Industrial Record

It is essential to obtain a full record of the previous employment, otherwise changes may be attributed to boiler-cleaning which are due to other causes. Some of the previous case reports leave us in doubt, for the occupational histories are not given in sufficient detail. Cooke's case was that of a man who worked at a colliery and had previously been riveter at a boiler works. He mentioned other cases at the same colliery, but did not state how many of these had previously worked down the pit.

Part-time or Whole-time Occupation

Before we can say that any man has sustained harm to his lungs due to boiler-cleaning, we must be certain that he is

not employed in any other occupation which might cause the changes, for in smaller firms the work is often only part-time; for instance, the Radcliffe Infirmary at Oxford has large boilers which require several days to clean, and for this purpose the hospital employs local sweeps.

Worker's Health Record

Previous pulmonary disease or infections contracted while the worker is engaged in boiler-cleaning may be important factors predisposing to the development of occupational pulmonary fibrosis, since they may impair the normal mechanism for the elimination of dusts from the respiratory passages. In our cases only one of our men was subject to coughs and colds; this is remarkable, bearing in mind the extremes of temperature to which these men were exposed. No case had any serious complication such as pulmonary tuberculosis.

It would be a great assistance if all men who work as boiler-cleaners could have a periodic radiological examination of the lungs. By this means one could detect the first appearance of radiological changes and could exclude from such work any men who seemed likely to sustain permanent harm. The adoption of such procedure should not be allowed to upset clinical judgment, for mistakes might arise if the radiological findings were stressed too much. The fact that radiographs show little change does not mean that the lungs are necessarily normal; conversely the radiological findings in cases of accepted pulmonary fibrosis often bear little or no relation to the severity of the patient's incapacity.

Type of Plant and Constitution of Scale and Flue Dust

These are obviously most important factors. The quality and quantity of boiler scale and flue dust depend on a number of conditions, the most important being the efficiency of the boiler; the quality of the feed water, its amount, and the measures taken for its softening; and the type of fuel which is used. These must be variable factors in different localities.

We have no information about the physico-chemical characters of the air-borne dust in the boilers or the flues of the Swindon works, but we were able to get several specimens of scale and dust analysed for the total silica, fluorine, and iron contents. These findings are tabulated for comparison with those given by other workers (Table II). They show that the total silica contents of flue dust are always much higher than in boiler scale, and suggest that flue cleaning is the likely to be more dangerous process. We were interested to find that there is less than 0.2% of fluorine present at Swindon, but we wish to draw no deductions from these findings until we have experience of other cases where the fluorine content of the dusts is higher.

TABLE II

	Total silica	Insoluble siliceous matter	Fluorine	Iron
W. E. Cooke— Boiler scale	10.3% of which 6.4% ..	Not mentioned	3.42% ferric oxide).	
Flue dust	34.4% of which 26.5% ..	Not mentioned	27.17% (ferric oxide).	
H. M. Williams— Boiler scale	0.94% ..	Not mentioned	Not mentioned	Not mentioned
Flue dust	31.08% ..	Not mentioned	Not mentioned	Not mentioned
H. E. Harding, D. L. McRae, Tod, and H. I. G. McLaughlin— Boiler scale	8.6% ..	Not mentioned	Not mentioned	10.1% metal.
Flue dust	6.1% ..	Not mentioned	Not mentioned	48.3% metal.
Drs. E. J. King, A. W. Lewis, J. B. O'Brien, G. W. R. Swindon— Stirling boiler 1226. Sample of ash from top flue	44.0% ..	Not analysed	No fluorine detected in any specimen. (Limit of spectrographic method about 0.2%)	3.70 g./100 g. specimen. (Metal.)
Stirling boiler 1226. Sample of ash from bottom flue	32.7% ..			4.30 g./100 g. specimen. (Metal.)
Stirling boiler 1226. Sample of ash from smoke box	38.9% ..			7.4 g./100 g. specimen. (Metal.)
Stirling boiler 1226. Sample of scale from inside boiler	5.4% ..			0.14 g./100 g. specimen. (Metal.)

Precautions

All our men were supposed to wear respirators. We know that they sometimes disregard this rule, but we had no means of assessing to what extent it was obeyed. Some of the older men worked in the days when no respirators were used. One man complained that the respirator gave inadequate protection for the eyes, and he had some degree of conjunctivitis.

In the last 20 years there have been definite improvements in the operation of boilers, which affect the amount and quality of the scale. Modern chemical treatment of the water has rendered the scale less in amount and easier to remove, whereas it was formerly a most difficult and tedious process. Even now there still remains some scale which must be scraped off. When the boiler is dry the final stages of cleaning are very dusty, but the process is less dirty than formerly. Flue cleaning remains a most unpleasant job. Our men had to remove about a ton of flue dust from each boiler. Two of our men (Cases 8 and 9) remember the use of pneumatic hammers, and state that the dust "was terrible." We know that not all firms have adopted modern improvements, and in such cases it is possible that their men sustain harm. Our report covers the conditions only as they exist in the Swindon works.

Summary

From experience gained by the examination of nine men in whole-time employment as boiler-cleaners at a big railway depot, we are of the opinion that, while there is no doubt that boiler cleaning is an unpleasant occupation, it does not necessarily induce ill-health. Further research on this problem is needed.

We wish to express our warmest appreciation for the kindness of the Great Western Railway through its Chief Mechanical Engineer, Mr. F. W. Hawksworth, who granted us permission to investigate this problem in their works; to Dr. A. W. Bennett, Medical Officer, G.W. Railway, Swindon, who gave us his time and advice, and to the men, who willingly helped us in every way. We are specially grateful to Dr. Margaret Murray, who advised us on the analytical findings, and for the help received from Dr. E. J. King, Dr. A. H. Lewis, and Dr. J. B. O'Brien.

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POSTGRADUATE EDUCATION OF MEDICAL PRACTITIONERS IN PUBLIC HEALTH

Final Report of the Society of Medical Officers of Health

Clinical Officers and Specialists

1. Although the Interim Report of the Society of Medical Officers of Health on Postgraduate Education in Public Health* was mainly devoted to the training of practitioners intending to become medical officers of health, it made some reference to the training of other officers giving service of a special kind in health departments. Such officers, it was suggested, should pursue postgraduate study in public health of a general character, but less prolonged and exacting than that required of medical officers of health. In addition, they should qualify themselves for the specialty they propose to practise by study and experience which should be, so far as possible, along lines entitling them ultimately to recognition as specialists in their subject whether they might remain attached to health departments as at present constituted, or move to some other occupation in the medical services. The position should be established that specialism within the public health service should not differ essentially in meaning from specialism outside of it; that it should be pursued in the categories which long experience has proved to be appropriate in the wide and varied

* PUBLIC HEALTH, March, 1945, 58, 65.

field of medicine; and that service in a health department should be one of the paths to the highest rank of specialism. Incidentally, it may be said that this conception involves recognition of the principle that practitioners in the public health service who are specialists in the clinical field should have facilities for work and experience similar to those of their peers outside of it, including access to hospital beds.

EXISTING PERSONAL HEALTH SERVICES

2. The main sections or branches into which the personal services of health departments are divided, taken more or less in the order in which they have come into being, are the specialist diagnosis and hospital care of infectious diseases, the school medical service, the maternity and child welfare service, the tuberculosis service and the venereal diseases service. Linked on the one hand with the school and child welfare services, and on the other with the care of persons suffering from mental disease, the mental deficiency service has remained less clearly demarcated except in institutions for mental defectives. Some of these services tend to break up into special compartments. For example, cases of tuberculosis may be dispersed for institutional care in hospitals for the respiratory or non-respiratory forms of the disease, or for adults or for children, each having officers devoting themselves to the care of a particular type of patient; and maternity hospitals are established in which the medical staff are engaged exclusively in midwifery and have no contact with children after the first few weeks of life. On the other hand, especially under the smaller authorities, an officer may work in more than one branch. This fusion is common as between child welfare and the care of children of school age. The degree of specialisation, therefore, varies greatly throughout the public health service. It is most clearly defined in the establishments of large authorities, but even here the limited prospect of appointment to higher posts except in administration has tended to induce officers to maintain contact for as long as possible with as many branches of public health work as possible, and so to restrict specialisation.

SPECIALIST STATUS

3. It is accepted that wide knowledge of medicine, both preventive and curative, is an asset to specialists in public health as in other provinces of medicine, but a stage arrives in the career of most medical practitioners in a specialty when the maintenance and enhancement of their skill require concentration on their own subject. This has happened with a large number of medical officers in the public health service, but they have not consistently been recognised as specialists and consultants by the profession generally, and they have not been afforded by local authorities a status or material reward comparable with that enjoyed by specialists outside health departments. It should be the object to ensure that both their postgraduate training and the conditions under which they work—and these two factors cannot be separated from one another—will put their recognition as specialists beyond question.

EXISTING QUALIFICATIONS

4. As the Society pointed out in its Interim Report on Postgraduate Education, various qualifications have been prescribed by Regulations for some types of officers appointed to the foregoing public health posts of a special character. These lay down minimum standards, which became necessary when the discontinuance of *ad hoc* Treasury grants brought about the cessation of Ministerial scrutiny of all appointments in grant-earning services. They do not, however, represent modern medical opinion as to the training, experience and academic attainment which should entitle a medical practitioner to recognition as a specialist, and were probably not intended to do so. In the Society's opinion the retention of prescribed qualifications peculiar to the public health services would tend to perpetuate the existing dissociation of officers in health departments from the main body of medicine. This, it believes, is unnecessary and undesirable. So long as study of the promotion of health and the preventive aspects of disease are sufficiently stressed, their

training and qualifications should not differ from those of other medical practitioners practising similar specialties.

THE SCOPE OF SPECIALISATION

5. The Society is conscious of the undesirability of multiplying specialist qualifications. The current practice of requiring all officers engaged in public health departments to hold a D.P.H. or similar qualification has at least had the merit of simplicity. For reasons stated in the Interim Report this is an unsatisfactory solution of the problem, and, in fact, it has not prevented the imposition of further diverse conditions of appointment laid down by the Regulations already mentioned. The extent of specialisation might be limited by rationalisation of the functions of specialist officers in the sphere of public health and a corresponding reform in their training. For instance, it is difficult from the medical point of view to see any reason in the barrier now existing at the variable age of school entry between the child welfare and school health services. Its existence is an administrative accident resulting from the separate responsibilities of central government departments and local government statutory committees. On the other hand, the combination of midwifery, including ante-natal care, with the care of the health of children, is more a matter of administrative convenience than in accord with medical conceptions of specialism. The Society's view is that it would be better if one set of medical officers were responsible for the specialist ante-natal, intra-natal and post-natal care of mothers, and another for the specialist care of children beyond the early neo-natal period. Collaboration during the first weeks of the child's life would be facilitated by the attachment we have already advocated of all such officers to appropriate institutions for in-patients. If this were agreed the training and qualifications of the officers concerned would follow the recognised lines of medical specialisation.

6. The tuberculosis service came into being as a result of the duty imposed in 1913 on local authorities of making schemes for the prevention and treatment of this disease. A field of specialism was thus created which had virtually not existed outside of the few sanatoria functioning at that time. The arrangement has served its purpose well, but the very existence of this service has drawn to it a wide diversity of chest diseases, so that it is now largely, at least on the diagnostic side, a medical service for many forms of respiratory disease, as well as tuberculous affections of other systems of the body. The tuberculosis officer is, in fact, a consultant physician with a bias toward tuberculosis and should be trained and qualified as such. To an increasing extent these officers are holding posts which entail in-patient as well as out-patient and domiciliary work, and are thus afforded the opportunity of maintaining their skill and extending their experience in the manner which the Society advocates.

7. Similarly, the diagnosis and treatment of the acute infectious diseases is a province of medicine entailing a wide knowledge of medical science. Experience in a hospital for these diseases has been recognised to be valuable for those intending to become consulting physicians. The expert in infectious diseases is a physician and his training and qualification should lie in that direction, with a special bias toward the infectious diseases.

8. The same comments apply to the venereal diseases specialist. He is a clinician who ought to have a wide knowledge of medicine. His training, experience and qualification should primarily be as a physician, but it is desirable that they should include some opportunity for the study of gynaecology and dermatology as well as venereal diseases. Throughout his career he should have access to hospital beds in which all phases of the venereal diseases are under controlled treatment.

9. As regards the care and control of mental defectives, and the younger service of child guidance, the present position has arisen from the predominating importance of ascertainment and management of defective and maladjusted children at school ages. It has fallen to the school medical service to organise this work, and much of it is actually done by school medical officers holding a special certificate. It is open to question whether this arrangement is entirely satisfactory,

although its administrative convenience is obvious. A few of the larger local authorities employ specially trained officers whole-time for the certification of defectives and the supervision of their care; some employ psychiatrists at child-guidance centres who do not devote their whole time to the care of children. At the present stage in the evolution of these services the Society refrains from making any specific recommendations on this subject, except to say that the experience of medical practitioners engaged in this work must extend beyond the institutional care of adult persons of unsound mind, and that a basic course in public health would help them to comprehend the grave social and hygienic issues which arise in connection especially with the problem of mental deficiency.

TRAINING, EXPERIENCE AND QUALIFICATIONS

10. The Society accordingly recommends that the training, experience and qualifications for officers practising certain special branches of medicine in public health departments should be as set out in Appendices A to F of this Report. For convenience, Appendix A is a restatement of the syllabus for a basic course in public health and preventive medicine set out in the Interim Report. This would be an essential part of the training of all such officers.

11. It will be observed that the preparatory period recommended for general medical and surgical experience, in addition to any term of pre-registration hospital residence, is rather shorter than that proposed in the Interim Report for practitioners desiring to qualify for posts as medical officers of health. The officers now under consideration differ from the latter in that the major part of their training and occupation is clinical, which must keep them constantly in some direct contact with the problems of general medicine and surgery.

12. The requirements set out in the Appendices are intended to be for officers seeking permanent appointment in one or other branch of the public health service. It is assumed that all medical practitioners partially qualified and desiring to be recognised as full specialists will have facilities for the necessary further training and experience and for obtaining any further qualification required, and that for this purpose they will be credited with the time already devoted to, and the experience gained in, the appropriate specialty.

13. Any statutory conditions based on these recommendations should not apply to practitioners who have entered the service before a day to be appointed.

SENIOR MEDICAL OFFICERS IN CHARGE OF DEPARTMENTS

14. In large administrative areas local authorities will probably continue to appoint medical officers to be responsible or partly responsible for the administration of the branches of public health work with which this Report is concerned. Others will hold institutional posts entailing administrative responsibility. Such officers should be fully qualified specialists in the appropriate branch of medicine. The Society considers that the possession of a D.P.H. or equivalent qualification should not be a statutory requirement for such appointments. It would be an advantage, however, if the courses in general public health could be so arranged as to enable practitioners to study in the parts relating to medical administration and so increase their competence for administrative posts in their own special branch of public health.

APPENDIX A

SYLLABUS OF BASIC COURSE IN PUBLIC HEALTH AND PREVENTIVE OR SOCIAL MEDICINE

This will occupy one academic term of whole-time study, or its equivalent in part-time study. Minimum number of hours of instruction, 300.

SYSTEMATIC

(a) The history of public health and public assistance; the evolution of central and local governing bodies in relation thereto; the evolution of the law in relation to health (both general and occupational), public assistance and social security.

(b) The existing functions of central and local authorities and voluntary organisations, and the nature and object of public health and medical services they administer.

(c) Society security, and the agencies for the relief of poverty and the promotion of social welfare.

(d) The sources and nature of information bearing on the health of the people, and its numerical presentation. The preparation of memoranda and scientific articles containing statistical data.

(e) The sources and control of infection.

(f) The influence on health of environment, including housing and occupation, of economic circumstances and nutrition, of personal hygiene and of mental strain.

(g) Physical education.

(h) The influences of heredity on health.

(i) Methods of educating the people as to the promotion and maintenance of health.

(j) International health organisations.

Note.—Throughout this course diagrammatic and tabular illustrations should be used. References to legal powers and duties should be general only.

Practical.—Demonstrations of special problems. Exercises in the solution of epidemiological problems and in the preparation of memoranda containing statistical data. Visits to places and institutions of public health importance.

APPENDIX B

CHILD HEALTH OFFICERS, INCLUDING SCHOOL MEDICAL OFFICERS

POSTGRADUATE TRAINING AND EXPERIENCE*

A. Clinical.—(i) General: not less than 18 months. Resident medical and surgical appointments in an approved hospital and general practice. Hospital residence and general practice should each occupy at least six months. (ii) Special: not less than one year. Resident appointments in approved hospitals having children's wards. At least six months of this period should be devoted to the general diseases of children. It is also desirable that the training should include hospital experience of infectious diseases and obstetrics.

B. Public Health.—Not less than one year. Appointment in the child-welfare section of an approved health department or departments, affording experience not restricted to any one age group.

POSTGRADUATE QUALIFICATION

In addition to presenting evidence of having pursued the basic postgraduate course in public health and preventive or social medicine, the practitioner during the above period should study child health and obtain a postgraduate qualification in the subject, the examination for which should give prominence to its preventive and social aspects.

Note.—To attain full status as specialist physicians in child health, practitioners in this category should conform to the accepted criteria for this specialty, and should be given facilities for complying with these criteria.

APPENDIX C

MATERNITY OFFICERS

POSTGRADUATE TRAINING AND EXPERIENCE*

General Clinical: Not less than 18 months.—Resident medical and surgical appointments in an approved hospital and general practice. Hospital residence and general practice should each occupy at least six months.

Public Health and Special Clinical: Not less than two years.—Appointments in approved maternity hospitals or maternity wards of general hospitals and in approved out-patient clinics. It is desirable that part of this experience should be obtained in a hospital with accommodation for gynaecological cases and for children, and that it should include attendance at the ante-natal, post-natal and child welfare clinics of an approved local authority.

POSTGRADUATE QUALIFICATION

In addition to presenting evidence of having pursued the basic postgraduate course in public health and preventive or social medicine, the practitioner during the above period should study obstetrics and gynaecology and obtain a postgraduate qualification in both subjects, the examination for which should give prominence to their preventive and social aspects.

* i.e., after admission to the Medical Register.

Note.—To attain full status as specialists in obstetrics and gynaecology practitioners in this category should conform to the accepted criteria for this speciality, and should be given facilities for complying with these criteria.

APPENDIX D

CHEST PHYSICIANS ENGAGED IN TUBERCULOSIS

POSTGRADUATE TRAINING AND EXPERIENCE*

General Clinical.—Not less than 18 months. Resident medical and surgical appointments in an approved hospital and general practice. Hospital residence and general practice should each occupy at least six months.

Public Health and Special Clinical.—Not less than three-and-a-half years. Appointments in approved sanatoria or hospitals having beds for tuberculosis and other chest diseases affording opportunity for laboratory work, and in approved out-patient clinics. Hospital residence and clinic appointments should each occupy at least the equivalent of one year whole-time.

POSTGRADUATE QUALIFICATION

In addition to presenting evidence of having pursued the basic postgraduate course in public health and preventive or social medicine, the practitioner during the above period should study general medicine and obtain a higher qualification in medicine, the examination for which should permit of specialisation in the aetiology, prevention and cure of tuberculosis and other diseases of the chest.

Note.—Practitioners having less than three-and-a-half, but not less than two years of public health and special clinical experience, and/or not holding the higher qualification in medicine, should be eligible for permanent posts as assistant chest physicians.

APPENDIX E

PHYSICIANS ENGAGED IN INFECTIOUS DISEASES

POSTGRADUATE TRAINING AND EXPERIENCE*

General Clinical.—Not less than 18 months. Resident medical and surgical appointments in an approved hospital and general practice. Hospital residence and general practice should each occupy at least six months.

Public Health and Special Clinical.—Not less than three-and-a-half years. Appointments in approved hospitals for acute infectious diseases affording opportunity for laboratory work, and in the epidemiological section of an approved health department. Hospital residence and epidemiological appointments should each occupy at least the equivalent of one year whole-time.

POSTGRADUATE EDUCATION

In addition to presenting evidence of having pursued the basic postgraduate course in public health and preventive or social medicine, the practitioner during the above period should study general medicine and obtain a higher qualification in medicine, the examination for which should permit of specialisation in the aetiology, prevention and cure of the acute infectious diseases.

Note.—Practitioners having less than three-and-a-half, but not less than two years of public health and special clinical experience, and/or not holding the higher qualification in medicine, should be eligible for permanent posts, in hospitals for infectious diseases.

APPENDIX F

PHYSICIANS ENGAGED IN VENEREAL DISEASES

POSTGRADUATE TRAINING AND EXPERIENCE*

General Clinical.—Not less than 18 months. Resident medical and surgical appointments in an approved hospital and general practice. Hospital residence and general practice should each occupy at least six months.

Public Health and Special Clinical.—Not less than three-and-a-half years. Appointments at venereal diseases clinics, with access to beds for the in-patient treatment of both male and female cases, and affording opportunity for laboratory work. During at least one year of this period the practitioner should obtain experience, preferably as a hospital resident, in dermatology and gynaecology.

May, 1945.

* i.e., after admission to the *Medical Register*.

POSTGRADUATE QUALIFICATION

In addition to presenting evidence of having pursued the basic postgraduate course in public health and preventive or social medicine, the practitioner during the above period should study general medicine and obtain a higher qualification in medicine, the examination for which should permit of specialisation in the aetiology, prevention and cure of the venereal diseases.

Note.—Practitioners having less than three-and-a-half, but not less than two years of public health and special clinical experience, and/or not holding the higher qualification in medicine, should be eligible for permanent posts as assistant physician for venereal disease.

NEWS AND SUMMARY

THE TITLE "NURSE"

The Minister of Health and the Secretary of State for Scotland have now made Orders under powers conferred upon them by the Nurses Act, 1943, and the Nurses (Scotland) Act, 1943, bringing into operation those provisions of the Acts which (1) restrict the use of the title "nurse"; (2) govern the licensing and control of agencies for the supply of nurses. These provisions will come into effect generally on October 15th next, but there are exceptions made for administrative reasons.

From October 15th next, it will be an offence for a person to use the title "nurse" unless he or she is a State-registered nurse, or an enrolled assistant nurse. An exception is, however, made in the Acts permitting children's nurses to use the title "nurse," unless there are circumstances which suggest they are something other than children's nurses.

The Ministers have also exercised the powers conferred on them by the Acts to make regulations permitting certain classes of persons to use expressions containing the word "nurse." In some instances, the regulations prescribe the precise title which may be used. Such titles include: (1) "Trained Nurse"; this may be used, for example, by persons on the general part of the list kept under section 18 of the Nurses Act, 1943, and the Nurses (Scotland) Act, 1943. (2) "Maternity Nurse" (by midwives). (3) "Student Nurse" (by persons in training for State Registration). (4) "Pupil Assistant Nurse" (by persons in training for the Assistant Nurses' Roll). A person holding the Tuberculosis Nursing Certificate of the Tuberculosis Association, or undergoing training for this certificate, may use any expression containing the word "nurse" which sufficiently indicates that he or she is either a nurse, or training to become a nurse, of tuberculosis patients only.

Part II of the Nurses Act, and the Nurses (Scotland) Act, 1943, provided that, from dates to be determined by the Minister of Health and the Secretary of State for Scotland—now fixed as October 15th next—agencies for the supply of nurses must be licensed by local authorities, supply only persons who are State-registered nurses, enrolled assistant nurses, midwives, or members of other classes to be prescribed by the Ministers and satisfy various other conditions. The object is mainly to safeguard the public against the risk of being supplied without their knowledge with the services of unqualified persons, possibly at high fees.

The classes, other than State-registered nurses, enrolled assistant nurses, or midwives, who may be supplied by such agencies are set out in the Nurses' Agencies Regulations, 1945, and the Nurses' Agencies (Scotland) Regulations, 1945. They consist of some, but not all, of the classes permitted to use the title "nurse" by the Nurses' Regulations. These Regulations also prescribe the form in which applications for licences are to be made, the fee to be paid—two guineas for a first application; one guinea for a renewal—and the form in which agencies must notify the person to whom a nurse is supplied of her qualifications.

The Pilot Press, 45, Great Russell Street, London, W.C.1, are issuing a series of books illustrating achievements in various departments of British life. *British Achievement in the Art of Healing* (price 2s. 6d.) describes a number of advances in medicine during the war, and also the organisation of services for selection of personnel, treatment of the wounded, and rehabilitation. The illustrations are clear, and give the layman a graphic view of what is being done by the medical profession. The text is by John Langdon Davies.

CORRESPONDENCE

PRINCESS TSAHAI MEMORIAL HOSPITAL FUND

To the Editor of PUBLIC HEALTH.

SIR,—I have recently returned from a journey to Ethiopia in connection with the Princess Tsa-hai Memorial Hospital, which is being erected there in memory of the Emperor Haile Selassie's daughter. It will be recalled that during the enemy occupation of her country the late young Princess devoted the five years of her exile to work in British hospitals and earned the affectionate admiration of patients and staff. She was glad to help Britain, and she hoped to lead a movement to create an efficient hospital service in Ethiopia, but so tragically she died at the early age of 22, only a year after the country was liberated and just as she had begun her great work there.

My investigations in Ethiopia have revealed to me very clearly the great need for a training school for nurses, which will be an essential feature of the Memorial Hospital. Hospital nursing now has to be left to untrained dressers, poor people who have never been to school, and owing to the shortage of medical staff even greater responsibility is thrown upon them than is borne by highly trained nurses in this country. Doctors' reports indicate how gravely unsatisfactory this is. The Memorial Hospital will also include provision for sick children and training for children's nurses. At present there are no children's wards.

The site for the hospital, which could scarcely be lovelier or more healthy, affords ample space for extension, gardens, and so forth. Three good new houses adjacent, the gift of the Emperor, are admirably suited as quarters for the resident medical officer and nursing staff.

It is hoped to complete the hospital building in December of this year, 1945. May I address an earnest appeal for assistance in completing the target of £100,000 through your valuable columns to the generous British public, who have always manifested a kindly feeling for our Ethiopian Allies and have sympathised deeply with them in the suffering they bore so bravely during the poison-gas aggression and the five hard years of enemy occupation. The Ethiopian Government resumed office with an empty exchequer and a small British grant amounting to a little over £2,500,000 spread over rather more than two years. Though increasing, the revenue is still grievously small owing to war conditions; it was £3,100,000 in 1944, including the last of the British grant of £500,000. Assistance in erecting and endowing the Princess Tsa-hai Memorial Hospital and Training School will be a precious aid to the first victims of the Axis—a people of 15,000,000 struggling to rehabilitate and develop, despite the stranglehold on trade produced by the world war, the handicap to tax collection imposed by unsettled problems of enemy property, and the grievous loss, which will be felt for many years to come, produced by the systematic murder by the Italians of the trained personnel and educated youth—the fair flower of the nation.

During my stay among them I gained a very great admiration for the efforts the Ethiopian people are making, but also I saw how greatly they need our help. Donations will be gratefully acknowledged by Lord Horder, Hon. Treasurer, Princess Tsa-hai Memorial Hospital, c/o Messrs. H. Reynolds & Co., Hon. Chartered Accountants, 1, Bloomsbury Court, W.C.1.—I am, etc.,

E. SYLVIA PANKHURST,
Hon. Secretary, Princess Tsa-hai Memorial Hospital.
Essex.

Brambling House Open Air School and Children's Centre, Chesterfield, is an experimental attempt to combine the physical, intellectual, and psychological approaches to children's problems. A report on "a five year experiment" has been issued recently. This arrangement does away with the usual distinction between the delinquent, the nervous, the retarded, and the ill child, and regards all sorts of conditions (ranging from chronic headaches to tantrums and bed-wetting) merely as symptoms that something is wrong with the child. Only children are admitted who are thought capable of improvement. The staff consists of a headmaster and five assistants. Each child works at his own pace and is taught individually, yet he is part of a social group and the whole range of school life and its activities is open to him. Although there are a few children who will spend most of their school life at Brambling House, most are returned to their former schools when they are considered sufficiently improved. It has been found that most of the children, some rapidly and some slowly, improve both in physical health and mental functioning. Apathy is replaced by cheerfulness, and listlessness by interest and activity.

From experience it has been found that there are two main types of unco-operative parent—those who neglect their children and those who are over-indulgent. Once real co-operation has been secured, the parents trace with interest the gradual development and changes in their children, and are rarely content with the mere disappearance of one or two symptoms. Parents who live within reasonable distance are encouraged to visit the children once a month or more frequently, and the children are encouraged to go home for the holidays.

BOOK REVIEWS

Aids to Tuberculosis (Nurses Aids Series). By L. E. HOUGHTON and T. HOLMES SELLORS. London: Baillière, Tindall & Cox. 1945. Pp. viii + 246 + 16 pp. Supplement. Price 4s. net.

The Nurses Aids series has always maintained a high standard, and the present volume cannot but enhance the popularity of the series. The authors, whose reputations are sufficient guarantee for the general acceptance of the views set out in the book, have succeeded admirably in their task of presenting the nursing aspect of this speciality. Practical procedures are clearly described and illustrated with diagrams and x-ray reproductions, and the underlying principles and reasons why are explained. The sections on non-pulmonary tuberculosis cover this wide field—with the remarkable exception of tuberculous glands—more adequately than similar accounts in other books of the same size, and are most useful in helping to provide a well-balanced account of the disease as a whole. The place which the nurse must take in the tuberculosis scheme, domiciliary, dispensary and sanatorium, is emphasised. The problems and difficulties of the work are discussed in a sensible and stimulating fashion. We have no hesitation in saying that this book is arranged, written and illustrated so as to impart the maximum of the right sort of information in the most attractive and interesting way.

Midwifery: Principles and Practice for Pupil Midwives, Teacher Midwives, and Obstetric Dressers. By R. CHRISTIE BROWN and RICHARD DOBBS. Second edition. 1944. London: Edward Arnold. Pp. 831. Illustrated. Price 15s. net.

The principal aim of the authors of this textbook is to give the midwife a sound basis of scientific knowledge. They start boldly on the structure of the universe and the kinetic theory of matter and attempt in a few chapters to explain the elements of chemistry and physics. Whilst one admires their enterprise, one may question whether the type of midwife for whom this book seems intended is one who brings much credit to her great profession. Most of us are acquainted with the midwife who glibly speaks of gonadotrophic and oestrogenic hormones and discourses on anterior and posterior asynclitism in the obturator pelvis, and she is rarely the best accoucheuse. In a word, the theoretical teaching in this book overweighs the practical instruction. There are indeed a few points in the latter which might with benefit be modified in a later edition; for example, the statement that a midwife can watch the progress of the second stage by noticing the gradual descent of the head by *abdominal palpation* seems a dangerous assumption that a high head is a normal event. Similarly, the treatment of shock by a tight binder round the upper abdomen does not commend itself, neither, perhaps, does the emphasis on raising the foot of the bed when the scanty and ramshackle condition of war-time furniture is taken into account. Artificial respiration is still recommended—albeit somewhat half-heartedly—for the shocked infant.

Dr. Dobbs has written an interesting section on the infant, but one hopes that he will revise his advice to treat infantile mastitis by a tight binder: it is much better to leave these swollen breasts untouched. Perhaps he will also mention the importance of holding the infant correctly during feeding so that milk does not regurgitate into the naso-pharynx and Eustachian tubes. This point is very seldom stressed, but in view of the prevalence of gastro-enteritis following otitis media it should receive attention.

Handbook of Social Medicine. By FRED GRUNDY. Luton: Gibbs, Bamforth & Co. (Luton), Ltd. 1945. Pp. 173. Illustrated. Price 8s. 9d.

The expression "social medicine" is being bandied about a good deal just now, but its meaning and scope are not widely known. In a well-written book for midwives, Dr. Fred Grundy, the Medical Officer of Health of Luton, explains the social implications of preventive medicine—the factors in the physical, industrial, and family environment which influence the incidence and course of diseases or the well-being of large numbers. This may be too narrow for a definition, but at any rate Dr. Grundy makes it the foundation

for a most interesting and comprehensive study. One feels that he knows his audience well and has taken pains to deal with the problems that arise in the everyday practice of midwife and health visitor.

The book follows a logical order in its design, considering first the physical and social elements of the environment, then examining the health services and showing how they contribute to the promotion of health. In a chapter on infectious disease the commoner conditions are fully documented, and the exact course of action prescribed in each case. With a skilful choice of diagrams and graphs, Dr. Grundy simplifies the arithmetic of health and disease. Good photographs and flashes of humour lighten the darkness of rules and regulations which have to be quoted because they must be known and used. Some of the material is presented in rather an abrupt manner for the general reader, but that is probably unavoidable in a handbook of this type.

This Milk Business: A Study from 1895 to 1943. By A. G. ENOCK. 1944. London: H. K. Lewis. Pp. 292. Illustrated. Price 18s. net.

The author, a firm believer in the high value of milk—at least of safe milk—has collected together in one volume much information hitherto dispersed in many reports, and so presents a mine of information on the process of transporting milk from the cow to the consumer. The purpose of the author was probably less to compile an encyclopaedia than to express his belief that it is only by distributing milk which has been pasteurised in bottles that the country can be assured of a safe supply. He first analyses the numerous factors involved in the production of milk, considers its dangers as a vehicle of infection, and then discusses the case for pasteurisation. While acknowledging that efficient pasteurisation renders milk bacteriologically safe without impairing its nutritive value, the author points out the difficulties of ensuring in the ordinary pasteurising process that all milk is adequately heated for the requisite time, the dangers of post-pasteurisation contamination (as exemplified by the Montreal typhoid outbreak), and the failure of present methods to ensure delivery of milk into sterilised containers. His remedy is the "in-bottle process."

Mr. Enock is severely critical of the Government's decision to permit, even as a war-time measure, pasteurisation by the H.T.S.P. process. He refers to the experiments of some years ago when it seemed possible that the carton container would replace the glass bottle, a step keenly anticipated by the medical officer of health, who saw a possible end to the difficulties arising from the return of badly contaminated bottles. Apart from mechanical difficulties in operation, however, it seems that the increase in cost of distribution prevented general application of this process. He suggests that the container of the future might be a steel bottle.

Hygiene: A Manual of Public Health. By J. R. CURRIE and A. G. MEARNS. 2nd edition. 1945. Edinburgh: E. and S. Livingstone. Pp. 432. 89 figures in text. Price 21s., postage 7d.

The growth of the personal services provided by local authorities that has taken place since the turn of the century has widened the conception of hygiene, which now covers more than environmental factors. As the medical practitioner, too, has been brought into steadily closer association with the manifold health activities of local authorities, the subject has assumed increased importance to the medical student. In 1938, Professor Currie, in his *Hygiene*, admirably covered the ground necessary to introduce to the student all aspects of the subject. So rapid had been the change even since then that in writing the second edition, the work now of Dr. J. R. Currie and Dr. A. G. Mearns, it was found necessary to recast the book and to rewrite much of it.

The first section is a general survey. Then the social services are considered in relation to the individual, who is followed from his inheritance, through his pre-natal and infant existence, his young childhood and his school years, to his active working life, and finally his old age. Food is dealt with separately, and lastly, the environmental services. The book is beautifully produced, with a number of excellent illustrations. Difficulties in production are emphasised by the fact that, although

not issued until 1945, the volume contains no reference to the Education Act of 1944. Some pages are marred by the use of chemical formulae instead of names. There are interesting chapters on infection, vitamins, and industrial hygiene. In the next issue it might be found possible to amplify the section relating to local authorities, their creation, duties, and activities.

The volume is commendably free from errors; but it is not made clear that ophthalmia neonatorum is notified, not to the M.O.H. of the sanitary district, but to that of the welfare authority. The position regarding the notification of puerperal infections might have been made clear. Not all will agree that the period of maximum susceptibility to scarlet fever is between the ages of six months and eight years. Regarding the use of A.P.T. for diphtheria immunisation, it might be inferred that the purpose of administering two doses was to minimise ill effects rather than because of the greater efficiency. The Aircraft Regulations were introduced in 1938, not 1928.

The authors are to be congratulated on producing a volume which gives the student an interesting introduction to hygiene in its broadest aspects.

OBITUARY

H. R. KENWOOD, C.M.G., M.B., D.P.H.

With the death in retirement on June 7th of Dr. H. R. Kenwood, emeritus professor of hygiene and public health in the University of London, and honorary lieutenant-colonel, R.A.M.C., there passes one of the pioneers in the country's health service, and one of its foremost writers on public health subjects.

Henry Richard Kenwood was born at Bexhill in 1862. He was the younger son of John Kenwood, of Wadhurst. Educated at Tunbridge Wells, in Paris, and at the University of Edinburgh, he graduated M.B., C.M. in 1887, and took the D.P.H. in 1891. For ten years he was M.O.H. for Finchley, and for some time was also deputy M.O.H. for St. George's, Hanover Square. In 1894 he became M.O.H. and public analyst for the metropolitan borough of Stoke Newington, and in 1908 M.O.H. for the County of Bedford. Kenwood had also been, from 1890 to 1904, demonstrator and assistant to the Professor of Hygiene at University College; he then became Chadwick Professor of Hygiene in the University of London. In 1919, for services to the Army during the first world war, he was created C.M.G. He gave the Milroy Lectures on state medicine and public health before the Royal College of Physicians of London in 1918. He was a past President of the Society of Medical Officers of Health, a Fellow of the Royal Society of Edinburgh, a Chairman of Council of the Royal Sanitary Institute, and an Honorary Foreign Member of the Société Française d'Hygiène. After 33 years' service in Stoke Newington he received from members and officers of the Council an illuminated address.

Hygiene and Public Health, the well-known textbook originally written by Dr. Louis C. Parkes, later became the work of Kenwood and of Prof. Harold Kerr. Kenwood was the author of *Public Health Laboratory Work (Chemistry)* which had run to eight editions by 1925. Among other publications were papers on natural purification of sewage, sewage pollution of sea water, rural water supplies, camp sanitation, and on tinned and potted foods.

GREGORY KAYNE, M.D., M.R.C.P., D.P.H.

Workers in tuberculosis will deplore the early death at the age of 44 of Dr. G. Gregory Kayne. He was not British-born, but came to this country when a boy. In his speech he showed no evidence of his foreign extraction, but, in spite of considerable fluency, his writing showed every now and again that English was not his mother tongue, and that his literary expression was influenced by the other languages of which he had so complete a knowledge. Kayne was a most indefatigable worker, and was never content with a superficial knowledge of anything in which he was interested. He would hold on to a point with the utmost tenacity, and not relinquish it until he had seen all round it and had a clear conception of what he was talking or writing about. A scrupulous intellectual integrity made him pursue his studies with a precision and energy that were bound to exact their toll. Apart from numerous papers on his chosen subject, his best-known literary work was the book, *Pulmonary Tuberculosis*, which he edited and wrote with W. Pagel and with L. O'Shaughnessy, whose death while serving with the British Army in 1940 was such a great loss to thoracic surgery in this country. *Pulmonary Tuberculosis* was something different from the usual textbook laboriously compiled and recurrently appearing in the lists of medical publishers. Throughout it is informed by the widest reading of the subject and based upon a comprehensive view of what still remains one of the biggest health problems in this and many other countries.

Gregory Kayne qualified in 1923, and took the M.R.C.P. and the M.D. (Lond.) in 1927. In 1936 he took the D.P.H. For a time he was assistant medical officer at the North Wales Sanatorium. When he was appointed Dorothy Temple Cross Research Fellow in Tuberculosis by the Medical Research Council, he visited all the important tuberculosis centres in Europe. His principal interest was in preventive work, and he finally wrote a comprehensive report on "The Prevention of Tuberculosis in Childhood with special Reference to Methods of Separation." For a time he edited *Tubercle*, and during the war served on the Tuberculosis Committee of the Medical Research Council. For the past ten years he was in the service of the Middlesex County Council, first as Deputy Medical Superintendent at Clare Hall, and then as Tuberculosis Officer at Hounslow.

A. G. TROUP, M.D., D.P.H.

We much regret to announce the death on July 6th of Dr. A. G. Troup, who for nearly 20 years had been medical superintendent to the Willesden Municipal Hospital.

Arthur George Troup was born in Aberdeen on October 24th, 1884. He was educated at the Robert Gordon College and Aberdeen University, where he qualified M.B., Ch.B. in 1906, proceeding to the M.D. in 1914; he took the D.P.H. in 1907. In his early days Dr. Troup was house-physician at the Sussex County Hospital in Brighton, and resident pathologist to the Stephen Ralli Memorial Laboratory. At various periods he was Assistant Medical Officer for Essex, for Hants, and for Willesden. In the war of 1914-18 he served with the R.A.M.C. overseas as M.O. to the 1/11 London Regiment, to No. 77 Casualty Clearing Station, and to No. 11 Egyptian Stationary Hospital, and held the rank of Acting Major. In 1908 Dr. Troup received a scientific grant from the B.M.A., and was Chairman of the Willesden Division in 1931-32. He was a Fellow of the Society of Medical Officers of Health, was an Assistant Examiner for the D.P.H. of the English Joint Board, and lectured in infectious diseases at Middlesex Hospital Medical School. He contributed articles to a number of medical journals, and was the joint author of an interesting paper published in the *British Medical Journal* in 1939 entitled "An outbreak of psittacosis at the London Zoological Gardens."

GEORGE THOMSON, L.D.S. (ENG.)

We regret to record the death on June 7th at Torquay of Mr. George Thomson, one-time honorary dental surgeon to the Royal Chest Hospital and the St. Pancras School for Mothers and an early member of the School Dentists' Society.

Mr. Thomson was born in Australia in 1858 and qualified L.D.S. (Eng.) from the Royal Dental Hospital in 1883. After seven years in Australia he returned to this country and at once took a leading part among the pioneers in public health dentistry. In 1911, before the days of National Health Insurance, he founded the British Dental Hospital, the object of which was to bring good dental care to the public at fees which merely covered the costs necessary to make the venture self-supporting. He will be remembered as a lifelong advocate of preventive dentistry, in which he was the staunch advocate of Sim Wallace's thesis that the stagnation of sticky carbohydrate foods about the teeth is the principal factor in the high incidence of dental caries in civilised man, and that the chewing of detergent foods is the most potent of all preventive methods. When the School Dentists' Society became the Dental Officers' Group of the Society of Medical Officers of Health George Thomson was the first President and later he held the office of honorary treasurer for a number of years. He was elected a fully-paid life member of the Society, and at the time of his death was a vice-president of the Group.

The naturalness of his manner, his kindness, modesty and ever-youthful outlook, endeared him to all. Even when over 80 he was remarkable for his mental alertness and physical well-being.

The annual luncheon of the Society of Medical Officers of Health will be held at the Holborn Restaurant on Friday, September 21st, 1945, at 12.30 for 1 p.m. The President (Prof. R. H. F. Picken) will take the chair, and he will be supported by a number of distinguished guests. As the attendance must be limited to 150, members of the Society are asked to make early application for tickets, which will be allotted according to priority. Those who wish to bring private guests will receive notice later if seats will be available. The tickets (10s. 6d., including gratuities, but not wine) are obtainable from the Acting Executive Secretary, Society of Medical Officers of Health, Tavistock House South, Tavistock Square, London, W.C.1. A meeting of the Society's Council will be held before the luncheon on September 21st.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

MATERNITY AND CHILD WELFARE GROUP

Following the National Conference on Maternity and Child Welfare a short clinical course, attended by 71 members and friends, was held at the North-Eastern Fever Hospital on June 30th, at the invitation of the Fever Group. Sir Allen Daley welcomed the M. & C.W. Group on behalf of the L.C.C.

WHOOPING COUGH

The first part of the day was spent touring the hospital, which included interesting laboratory demonstrations. After luncheon there were three papers. The first, on laboratory diagnosis and control of pertussis, was given by Dr. R. Cruickshank. He said that the highest mortality in this and most other countries was in the first year of life. In this country 50% occurred under 1 year of age; in America 66% were in the first year, with 50% in the first six months. Improved diagnosis and prophylactic immunisation were the two means of tackling the problem. Diagnosis was made by haematological means and the isolation of the organism by cough plate and the post-nasal swab. This latter was more satisfactory than the "cough plate," and penicillin was added to the Bordet medium to keep down the growth of post-pharyngeal organisms. Prophylactic immunisation depended on the quality of the antigen. The best antigen was the alum-precipitated vaccine, given in three doses totalling 100,000 million organisms. It is found that three doses at three-weekly intervals between each gave better immunity than three doses at weekly intervals. If full protection was not given the attack was attenuated. Pertussis anti-serum had also been tried in a residential nursery: 17 contact children were given 5 c.cm. rabbit serum, and five of these had modified pertussis; while of 12 unprotected children eight had severe pertussis.

A lively and interesting discussion followed this paper.

DYSENTERY AND ENTERITIS

Dr. Swyer then read a paper on the clinical control of dysentery and enteritis in nurseries. He said that with few exceptions bacillary dysentery in children in this country was caused by the Sonne strain, infections with the Flexner strain were few and Shiga dysentery was exotic. Sonne dysentery was the mildest form, and there was no doubt that its very mildness was an important cause of its widespread occurrence. Three to four stools a day were passed for a few days only. For about three days mucus was present in the early stages in nearly all, and blood in 25% of cases.

The complications were usually of the upper respiratory tract and included rhinitis, bronchitis and otitis media, in that order of frequency. Diagnosis could be made clinically on those cases passing blood and mucus. Diagnosis should always be confirmed by plating specimens of faeces and rectal swabbings on desoxycholate-citrate agar.

An investigation of an institutional outbreak of Sonne dysentery showed that the proportion of children still passing the bacillus in their stools at the tenth and twelfth week was high, treatment being only symptomatic. This high convalescent carrier rate, together with mild symptoms, led to the use of drugs to clear the stools of infection. Sulphapyridine was given until negative stools were obtained, and there was a bacteriological clearance in five as compared with 21 days in controls. There was no bacteriological relapse. In another series, sulphabenzamide, sulphamidobenzamide and succinyl sulphathiazole were used. The clearance rates were 1.8, 3.28, and 2.4 days, in that order; the bacteriological relapse rates were 7.3%, 9.3% and 34.6%. All chemotherapy was controlled by blood-cell counts and urine examinations. It was found that discharge from hospital should not be delayed longer than necessary. Three consecutive stools and rectal swabbings should be taken at two-day intervals, and with a physically fit child and negative stools there were practically no return cases.

Stringent precautions were taken to prevent the spread of infection. All staff wear gowns whilst attending a patient and scrub the hands afterwards. For infants destructible diapers are used, and on removal were immediately placed in a brown-paper bag contained in a metal bin with a closely fitting lid. These bins were collected daily and the paper bag with its contents burned in the destructor. All soiled linen was placed in a similar bin which contained some liquid antiseptic: these bins were collected daily and emptied into a large tank containing antiseptics; the contents remained for 24 hours before being removed and cleansed by the laundry staff. It was highly desirable that the same nurse did not feed patients and change their diapers.

A paper on the administrative control of dysentery and enteritis in nurseries was then read by Dr. Hamilton Hogben. In the day nurseries under his control there had been only six confirmed cases of dysentery in five and a half years. The residential nurseries were not so good owing to lack of trained staff, of training of students, and sanitary conditions in the houses taken over as nurseries, and to the insufficient medical supervision of the children and staff. There was an interesting discussion after each paper.

Dr. Jean Mackintosh proposed a vote of thanks to Dr. Mitman and Dr. Begg as the two officers of the Fever Group and to Dr. Harries, Medical Superintendent, also asking him to convey the thanks of the members and visitors to the matron and staff for their kindness, and to the speakers.

The Annual General Meeting was held as a social evening at the Sesame Club, Grosvenor Street, London, W.1, at 8 p.m. on June 28th. Fifty-five members and guests were present and were received by the President. Among those present were Sir George Elliston, Dr. J. D. Kershaw (President of the School Medical Service Group), Dr. Mitman and Dr. Begg (President and Secretary of the Fever Hospital Medical Service Group). During the meeting Dr. G. I. Brodie spoke on the importance of medical officers at the centres urging the eligible public to "take up" the Government vitamins.

Dr. Jean Mackintosh delivered her Presidential Address on the future of the maternity and child welfare officer.

MATERNITY AND CHILD WELFARE GROUP

POST-GRADUATE COURSE HELD IN BIRMINGHAM, MAY 4TH-6TH, 1945

On Friday, May 4th, at 8 p.m., the Lord Mayor of Birmingham held a reception at the Council House. Each member of the Maternity and Child Welfare Group attending the meeting was received by the Lord Mayor, the Lady Mayoress, Dr. Newsholme, Medical Officer of Health to the City, and Dr. Morris Jones on behalf of the President of the Group. Dr. Newsholme welcomed the Group to Birmingham, Dr. Morris Jones spoke on behalf of the guests, and the Lord Mayor replied. Unfortunately the Group's President was unable to take part in the week-end, owing to illness.

On Saturday morning, buses left the City for the Sorrento Maternity Home. Dr. V. M. Crosse gave an interesting address on the premature baby. She described the Sorrento Maternity Home, and their method of following up premature babies in order to gauge their mental capacity and physical development. She stressed the importance of diet in the reduction of premature labour, and of an adequate number of ante-natal beds for toxæmic cases. She traced the technique used from the birth of the premature baby to its discharge from hospital.

At the Accident Hospital, Dr. Gissane described the difference in treatment of the ex-Serviceman in the 1914-18 war and of the ex-Serviceman and civilian injured through war or through factory work in the present war. The Rehabilitation Centre's aim was to put a disabled man into the best possible job for which he was capable. Downgrading in a job offended the pride of a skilled man. Dr. Gissane then showed a film of the Austin factory, employing disabled people and demonstrating the close co-operation that exists between hospital and factory workshop, where the disabled are taught to use the machines again.

After lunch the Group visited the Blind Babies Home at Leamington Spa, where Dr. Howell Jones spoke on the work of the Home. Although the Home used to take normal blind babies, it is now limited to mentally deficient blind babies.

The Group then visited the Institution for Training Guide Dogs for the Blind, where Capt. Liakhoff described the work of the Institution. His secretary, a blind girl, described how her character and outlook on life changed when she bought a guide dog.

A dinner was held in Birmingham, the guests of the evening being Dr. Newsholme, Prof. Parsons, Mr. Councillor Grosvenor (Chairman of the Public Health Committee), and Dr. and Mrs. Councillor Murtagh (Mrs. Murtagh is Chairman of the M. & C.W. Sub-Committee of the Council).

On Sunday, May 6th, a visit was paid to the Dudley Road Hospital, Maternity Block. Mr. Wentworth Taylor describing the work there said there were four things desirable in a maternity block: (1) 100-125 beds; (2) to be closely attached to a general hospital; (3) access to all facilities, such as biochemical and pathological laboratories; (4) a gynaecological department to deal with abortions. Patients with sepsis were removed from the block into the main hospital.

The next visit was to the Children's Hospital, Ladywood Road. Prof. Parsons described the work of the Babies' Block. The "glass cages" in reality were glass partitions 6 ft. high which extended only half way across the room. In the premature babies' section each baby had a separate ward, which was air conditioned, with a main oxygen supply lead into each room.

The week-end was a great success and was attended by 80 doctors. The kindness of all the institution staffs was overwhelming.

NORTH-WESTERN BRANCH

President: Dr. V. T. Thierens (M.O.H., Blackburn).

Hon. Secretary: Dr. J. E. Spence (M.O.H., Eccles).

The annual meeting of the Branch was held in the Town Hall, Blackburn, on May 25th, when 21 members and visitors were present. The chair was occupied by the Mayor of Blackburn (Councillor E. Holden), who accorded the members a cordial

welcome, to which the President replied. The Mayor then vacated the chair.

The minutes of the last annual meeting were confirmed and signed.

In the absence of the Hon. Treasurer, the Hon. Secretary submitted the balance sheet, which was adopted.

The Hon. Secretary submitted his annual report, in which he referred to the death of two past-Presidents, Dr. F. A. Sharpe and Dr. E. W. Rees-Jones, and the members stood in silence as a mark of respect. The report was adopted.

Dr. H. E. Marsden was unanimously elected President for the ensuing year. The following officers were also elected: *Vice-President:* Dr. V. T. Thierens. *Hon. Treasurer:* Dr. F. T. H. Wood. *Hon. Secretary:* Dr. J. E. Spence. *Representatives on Council:* Drs. F. Hall, W. M. Frazer, J. E. Spence. *Committee:* Drs. Metcalfe Brown, M. E. Cliff, Lissant Cox, R. M. Galloway, J. T. Chalmers Keddie, J. D. Kershaw, G. J. Roberts, C. O. Stallybrass.

The proposals submitted by the committee for the meetings during the next session were approved.

The members were then conducted over the works of Messrs. Phillips by the manager and staff.

SOUTHERN BRANCH

President: Dr. Catherine Avery (M.O.H., Winchester R.D.C.).

Hon. Secretary: Dr. H. C. Maurice Williams, O.B.E. (M.O.H., Southampton).

A meeting of the Southern Branch was held at Bournemouth on May 25th. Members had been asked to invite dental officers of their Authority to attend this meeting, and 17 members and six guests were present.

The minutes of the meeting held on April 6th were approved as correct and signed by the Chairman.

Mr. D. E. Mason, L.D.S., addressed the meeting on future developments of the public dental services, with particular reference to the Education Act, 1944, and the treatment under the School Medical Service Regulations and Circular No. 41. Mr. Mason gave a most interesting paper, which was followed by an animated discussion.

YORKSHIRE BRANCH

A special meeting of the Branch was held in Leeds on April 13th, to consider the revised salary scale received from the Council of the Society. There were 24 members present.

CORPORATION OF GLASGOW

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

Applications are invited for the post of Medical Officer of Health for the City of Glasgow from qualified medical practitioners who are registered in the Medical Register as holders of a Diploma in Sanitary Science, Public Health or State Medicine. The Medical Officer of Health is also Port Medical Officer for the Port of Glasgow.

The duties comprise the administration of all the statutory health and sanitary services of the Corporation.

The post is due to fall vacant at the end of March, 1946, and the new Medical Officer of Health will be expected to take up duty at the beginning of April, 1946, or as soon thereafter as possible.

Salary at the rate of £1,500 per annum, rising by annual increments of £50 to £2,000 per annum, plus war increase, and with £50 per annum additional for Port duties.

The appointment is subject to the provisions of the Corporation's Superannuation Scheme and the successful candidate will be required to pass a medical examination.

In order to allow time for candidates now abroad or in H.M. Forces to apply, the last date for receipt of applications has been fixed at October 1st, 1945. Applications should be accompanied by copies of not more than three testimonials or the names of referees.

WILLIAM KERR,
City Chambers, Glasgow.
June 28th, 1945.

Subscription 31s. 6d. per annum, post free, in advance.
Single copies 2s. 6d. post free.

"Public Health" is the Official Organ of the Society of Medical Officers of Health and a suitable medium for the advertisement of official appointments vacant in the health service. Space is also available for a certain number of approved commercial advertisements. Application should be made to the Executive Secretary of the Society, at Tavistock House South, Tavistock Square, W.C.1. Telephone: Euston 3923. Telegrams: Epidaurus, Westcent.

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EDITORIAL

The Government and the National Health Service

The King's Speech announced that Parliament would be asked to approve measures to establish a National Health Service. This statement was only slightly added to by the Leader of the House in the ensuing debate when he said that it was the intention of the Government to proceed with the National Health Service scheme and to introduce the necessary legislation during the present session. The new Minister of Health (Mr. Aneurin Bevan) has not yet spoken, but from the exchanges which have taken place it looks as if the conversations with Mr. Willink which resulted in tentative proposals for modification on the administrative side will go for nothing and a return will be made to the White Paper in its original integrity. It is perhaps a pity that the talks which Mr. Willink had, not only with the British Medical Association, but with other bodies, were secret, because it led to the accusation that the late Minister of Health had capitulated to the doctors and to other interests. However, the slate, or a large part of it, must now be wiped clean.

The White Paper was not, of course, a Parliamentary Bill. It was written in general terms, and everything depends upon its interpretation. The question is how the new Government will interpret it. In a declaration of policy which was made at the Blackpool Conference of the Labour Party at Whitsuntide very little was said about health, merely a few generalities—as, for example, that health centres should be established where people could get the best that modern medical science can offer, that there should be more and better hospitals, and that there should be proper conditions for doctors and nurses and improvements in the maternity and child welfare and school medical services. But the Conference applauded to the echo a denunciation of Mr. Willink for what was termed his surrender to the B.M.A. on administrative questions.

A more detailed document was laid before the last Trades Union Congress, also held at Blackpool, six months previously. This was a full examination of the White Paper by the General Council of the T.U.C., and received the approbation of the Congress. At that time nothing had been published about any negotiations between the Minister and the doctors. In this document, which was said to represent the views not only of the T.U.C. but of the Labour Party and the Co-operative Congress, the original White Paper was welcomed, subject to reservations, as a very big step forward. It was urged as very important that there should be no departure from the proposal that every member of the community should be included in the scheme. Any provision that a person covered by the scheme might be allowed to pay for private treatment if he so desired should not in any way exempt him from the financial contract, and in the same way no contracting-out was to be allowed on the ground that the individual was contributing to a hospitals saving scheme.

Medical education may be made a more important part of the proposals of the Labour Government. The Labour Party feel that medical education is too much the preserve of the well-to-do. Such education, in their view, should be free so as to enable the most suitable people to take advantage of it. No likely candidate should be prevented from proceeding because of economic difficulties.

The T.U.C. document showed an awareness that if any scheme was to succeed it must carry with it the goodwill of the medical profession. It was regretted that the White Paper did not go as far as Labour desired in the direction of a complete State medical service, but the view was put forward that the proposals should be supported, because here was a *via media* along which the profession itself might travel. Whether this accommodating spirit will continue with Labour now in power remains to be seen. On remuneration and superannuation, on such questions as study leave and the general administration, the service must be such, said the T.U.C. and its collaborators, as to attract and retain the very best medical personnel. They agreed that the person who desired to obtain his medical attention privately should be free to do so, and that practitioners who rendered such service on a private basis must have access to hospital facilities at every level; but there should be safeguards to secure that such private patients did not obtain preference over public ones, and that doctors remunerated on a salaried basis were not paid for time devoted to private practice.

Another point made was that within the limits of availability every individual should have freedom of choice of practitioner, whether in separate or in group practice, but as doctors also must have freedom of choice in the patients they accepted it was essential to provide that such freedom should not operate as to prevent any individual from obtaining all the health care which he needed. As to the employment of consultants, it seemed to be agreed that this should be arranged by some central body, such as the Central Medical Board proposed in the White Paper.

On the question of hospitals the view of the Labour bodies was that it would be better boldly to incorporate the voluntary institutions in one unified hospital system, planned for in hospital regions, the boundaries of such regions not necessarily to be contentious with those of existing local authorities. As for health centres, while recognising that the demand for the present family doctor system would continue for some time, the proposals in the White Paper concerning the establishment of health centres were welcomed. It was considered that such centres should be set up wherever there was a public demand for them, and that the facilities and amenities of the centres should compare more than favourably with those at an ordinary doctor's surgery. The centres should also be easily accessible, and the highest form of service obtainable at or through them.

On the important subject of administration, which was the

first subject discussed with the late Ministry, the Labour attitude appeared to be somewhat vague. It was said only that there must be proper democratic control of the whole scheme, but, of course, democratic control can take many shapes. Other points stressed were the interweaving of the industrial health service with the national health service as a whole, the need for taking immediate steps to ensure an adequate supply of properly qualified personnel for dental and ophthalmological services (the services mentioned in the White Paper as temporary exceptions to comprehensiveness), the requirement that no part of the initial cost of medical and surgical appliances should fall on the patients, and that for medicines the media for supply should be either the existing panels of retail pharmacy or the hospitals or health centres, and only in emergency the doctor's surgery.

Such in rough outline were the ideas, at least some months ago, of the Labour Party and its partner in the industrial field, the T.U.C. The programme of the Conservative Party may be taken to be the scheme propounded in the White Paper. It is true that the scheme on its administrative side was considerably altered in conversations with the late Minister of Health, but the alterations were tentative and were put forward with a view to obtaining the reactions of the profession; they were not Government proposals, though there is no reason to think that they would not have been adopted by a Conservative government. No doubt the Liberal and other parties, had the issue of the polls been more favourable to them, would have amplified their own already published variants of the scheme, but one of the significant features of the recent election is the sharp return to two-party politics, which, whether advantageous in other respects or not, has at least the merit of simplifying the issue.

Public Health and the B.M.A.

Questions of public health took up more time and attention at the Annual Representative Meeting of the B.M.A. this year than questions of general practice or national health insurance. The school medical service under the new Education Act, the negotiation of a new agreement in place of Askwith, the safety of milk, the national maternity service, the policy of equal pay and bonus for men and women doctors in the service—all evoked interesting debate. The absence of Professor R. M. F. Picken, who for many years has presented the public health business to the assembly, was a matter for general regret. His absence was due to withdrawal from Association work following his appointment as acting provost of the Welsh National School of Medicine. It would be ungracious to say that he is giving to a principality what was meant for a country, but his work for the B.M.A. in many capacities was very highly appreciated. Failing Professor Picken, the report was ably presented by Dr. James Fenton.

The debate on the school medical service showed the great desire of the representatives that the health of the school child should not pass out of the care of the family doctor. There was an undertone of anxiety about what one of the speakers called "splinter medicine," that just at a time when it was hoped to have an integration of services there should be a sharp reversal of that tendency in the important case of the school child. One doctor indeed foresaw the melancholy prospect of the family practitioner never having a "look in" until the potential patient was 16 or 18 and entered national health insurance, for the midwife or the obstetric specialist would usher him into the world, the paediatrician followed by the health visitor would look after him in early childhood, and the school medical officer would take up the tale until his education was completed. On the other hand, it was claimed that there was no real intention to divorce the care of children from private family practice, except for that unfortunate and not small class of children whose parents, while often careful enough of them in other respects, are unwilling to call in medical aid when the child by reason of some defect or repeated minor illnesses obviously stands in need of it. The meeting expressed its dissatisfaction with the failure of Mr. Butler to receive favourably the proposals of the Council of the B.M.A. on the inability of the profession to implement at present and for some time to come the operation of the

section of the new Act requiring the local authorities to provide children with medical attendance, and called for the suspension of the operation of this section pending agreement on the terms and conditions applicable to a National Health Service. Mr. Law, the Minister in the "Caretaker" Government, said that he would not approve any proposal which would lead to the setting up by the local education authority of a general medical practitioners' service. Miss Ellen Wilkinson, the new Minister, has yet to make a statement on the subject.

On the new scale of salaries which will replace the Askwith agreement, the meeting decided by a large majority that negotiations should be conducted with the Government as part of the negotiations for the whole profession, and not, as before, with the associations of municipal corporations and county councils. This was in despite of Dr. Fenton's reminder that, while in the case of the national health service the Government would be the employer, the medical officer of health's employer is the local authority; it could hardly be laid down that the local authority should have no voice in deciding what salaries should be. Much was said about the hierarchy in local government: how the town clerk is the highest paid official, the borough treasurer the next, and after them the medical officer of health, while after him comes the medical superintendent of the municipal hospital no matter what its size.

Some hot words were said on the question of the safety of milk—a subject which now seems to have got beyond the sphere of argument. It is evident that argument will not move the authorities in the direction of the most elementary piece of preventive medicine. The short debate showed how strong is the feeling on this subject.

On the question of a national maternity service, the meeting unanimously pledged itself to resist the introduction of any new criteria of qualification in midwifery which would, if officially recognised, deprive any registered medical practitioner of the right to practise midwifery in the national service. The attempt to place the onus of much maternal and infant mortality on the general practitioner was countered by the report of the Royal College of Obstetricians and Gynaecologists itself, which put its finger on the spot by saying that the cause was poverty, deficient nutrition, bad housing, and overcrowding.

Finally, on the question of equal pay, the policy was unanimously reaffirmed of equal pay for equal work for men and women doctors, this equality to include the cost-of-living bonus, as to which there has been some difference of opinion. A further motion carried at the instance of two women doctors was that the pensionable age for medical women should be the same as that for medical men. Why, indeed, should medical women be pensioned at an earlier age? Their expectation of life is longer than that of men, and it was a woman doctor who said it—at a given age a woman tends to be less worn out than a man.

A series of meetings organised in Germany, at which Army Hygiene Officers attached to I Corps District attended, were arranged by Lt. Col. M. Markowe, R.A.M.C., and Major W. C. Harvey, R.A.M.C., peace time Assistant M.O.H. County Borough of Ipswich and M.O.H. Borough of Southgate, respectively. Most of the Hygiene Officers attending were members of the Society of Medical Officers of Health, and much stimulating discussion has resulted. The morning session of each conference is devoted to a review of local problems as they affect military hygiene officers and Military Government public health officers. During the afternoon session opportunity is being taken to discuss general public health problems, in order that the officers concerned may keep abreast with the latest developments in civil legislation and procedure.

At a recent conference an interesting paper on the School Medical Service was read by Major Grundy, R.A.M.C. (M.O.H., Southall). The discussion which followed Major Grundy's paper was varied and vigorous. It is felt that by continuing such meetings medical officers of health serving in this part of Germany will be able to bridge the gap which leads to their return to civil public health practice. The officers themselves feel that the contact thus established keeps them in touch with their peace-time duties, and that the conferences at least serve to remind them of their Group meetings, to which they look forward when their work in Germany has ended.

MEDICAL PROBLEMS OF THE REHABILITATION OF CAEN

By Major S. F. RAISTRICK, R.A.M.C.

This article is written to place on record the medical problems encountered after the liberation of Caen, and dates from September 2nd, 1944, when the author took over the medical administration of the town. Caen, an inland port and communications centre, with a peace-time population of 61,334, had been heavily bombed and fought over, and its restoration was a military necessity. Urgent problems had presented themselves immediately after liberation when disposal of sick, refugees and dead, and the supply of water, etc., had to be organised under battle conditions. Civilian administration still functioned, and even in July, a fortnight after liberation, representatives were invited to conferences with the military authorities to discuss immediate problems. With full agreement of the civilian authorities, plans to seal the most damaged areas by wiring were published. These plans were never fully developed, and by September co-ordination of effort was lacking, restoration was almost at a standstill, and new emergency problems were appearing with the rapid increase of civilian population. So vast was the damage, and so many the civilian appeals for immediate help, that it was ever necessary to remember that the primary medical object was to safeguard the health of the troops maintaining and developing the operational needs of the locality. Civilian problems, however, could not be ignored, as any epidemic among the civilian population might adversely affect the health of the troops, thereby creating a vicious circle of ill-health.

A detailed "recee" was made as quickly as possible, and a medical plan formulated. The various aspects of this plan will be discussed under separate headings, but it must be appreciated that these tasks, many of the highest priority, often proceeded concurrently.

Clearance of Debris

The survey of the town showed that many areas were damaged beyond possibility of immediate repair, while others offered, in part, prospects of early habitation. The original fencing had largely been broken down. It was therefore decided that the most damaged areas should be re-sealed to deny access to all except those engaged on debris clearance. This was necessary, as civilians returning to the town were scavenging the debris for personal belongings and even for bodies of their relatives. One sympathised with these people returning with the clothes they were wearing as their only possessions, and it was a natural impulse for them to enter the ruins to search for clothing, furniture, and even the bodies of relatives or friends, but with fly-breeding almost at its peak the threat of a serious epidemic made it imperative to exclude all unauthorised persons from the demolished areas. Wiring, with triple dannert wire, was carried out by prisoners of war working under R.E. supervision, but even these methods did not exclude many unauthorised civilians, who repeatedly cut the wire, chopped down the supports, or used assault methods with planks and mattresses to surmount the barricade. A system of passes was therefore introduced, so that in the most deserving cases private work under supervision could be carried out within the perimeter wire. Control was still further maintained by a mobile jeep patrol of military police and local *gendarmes*.

The ideal at this stage would have been to produce separate dumps of good stone, timber, steel, house fittings, etc., and to bull-doze the rubble to ground level. Facilities, however, were not available and alternative measures had to be adopted. The sealed area was divided into five sectors, the clearance of which was carried out by prisoners of war, who were divided into parties, each working under the immediate supervision of a N.C.O. of the Field Hygiene Section or Field Sanitary Section allocated to the area. Each sector was systematically combed, and if possible all organic debris removed, while in other cases it was sealed with rubble and in this way all sources of fly-breeding were eliminated.

In the less damaged parts a similar programme based on a joint Medical/R.E. "recee" was carried out, the area being divided into sectors, which were cleared in order of military importance. Many minor streets around which habitable houses were found had to be cleared of debris regardless of their military significance, to prevent them becoming refuse dumps. Others, where habitation was impossible, remained piled 15 to 20 ft. high with debris. The importance of this clearance of organic debris cannot be overstressed, and the time and labour expended were well justified by the subsequent low sick rates.

Refuse Disposal

Civilian organisation for refuse disposal was almost non-existent. Rubbish and garbage were collected in four horse-drawn carts and dumped on the local racecourse. Almost every inhabited street was stinking with piles of decaying garbage, household refuse, human excreta, and the remains of dead putrefying domestic animals. Millions of flies swarmed over this refuse, which in many cases was a living mountain of maggots. The civilian authorities had no sense of urgency in this problem, which was indeed beyond their resources, and it had to become a temporary military responsibility.

A centrally situated disused quarry was prepared for use as a controlled tip. Pioneers and prisoners of war were taught the principles of controlled tipping and manned the site under supervision. Organic debris from the sealed areas and refuse from the less damaged streets were tipped with rubble in alternate layers. The racecourse dump was closed, bull-dozed to the surrounding level, and sealed with further loads of rubble obtained by the R.E.s during street clearance. As garbage receptacles were almost non-existent improvised containers had to be supplied as an emergency measure, and salvaged 40-gallon oil drums were distributed on a scale of one per two occupied dwellings. Unfortunately, materials and labour did not permit the supply of covered receptacles, and the open bin had to be accepted as a great step forward in the street clearance problem. Through the local press the population was urged to use these bins, and a regular clearance scheme was started.

Gradually, civilian vehicles were brought into use, and the responsibility of street clearance handed over to the civilian authorities. By the end of the year seven vehicles, as compared with a peace-time total of nine, were available, but the service functioned only by the constant prompting of the local authorities. The final results would have been achieved much more quickly if the civilian authorities had requisitioned vehicles for street clearance, rather than left the work in the hands of a private contractor, who had little regard for the town's needs.

Water Supplies

A plan for the restoration of the water supplies of Caen had already been set in motion at the beginning of the period covered by this report, and a few temporary water points were in existence. The first phase of restoration was actually begun in July and was intended to supply most of the then inhabited areas with water. Water was lifted by two centrifugal pumps (capacity 306 cu.m. per hour) driven by a Diesel electric generator, from a well sited on the Promenade du Fort. The yield of the well was approximately 7,000 cu.m. per day (1,540,000 gallons), which meant that continual pumping could be maintained daily, the well recovery rate being approximately equal. Tests showed the following figures: Depth of water in suction chambers before being put into use, 14 ft.; after two weeks' pumping, 10 ft. Unfortunately, owing to the pumps having insufficient lift to fill the town's ferro-concrete reservoirs, a variation of areas served occurred at peak hours of consumption. In the early stages no chlorination was performed, and instructions were issued in the local press that all water had to be boiled before drinking, but by the end of September two Candy autominor chloramination plants were installed at this well.

The second phase of the restoration of the mains supply consisted of the reconditioning of the St. Gabriel System. This was housed in a pumping station beyond the

racecourse and consisted of two submerged vertical pumps with a capacity of 650 cu.m. per hour, driven by two vertical electrical driving motors. A pressure chloramine doser was installed and worked extremely satisfactorily. (This plant can deal with 30,000 gallons per hour, and requires 4 cwt. chloride of lime and 1½ cwt. ammon. sulphate for three months running.) This second well was also connected to the two ferro-concrete water towers, to which it supplied 14,000 cu.m. daily.

The third phase of the restoration presented substantial difficulties. Water was obtained from 57 springs at Moulines (18 kms. south of Caen) and fed by gravity in a 500 mm. pipe to a pressure break reservoir at Tilly la Campagne and then to Caen, supplying the district of Vaucelles, and certain areas north-east of Caen by a bridge-carried main feeding the reservoir of equilibrium sited in the Rue Deliverande. This reservoir was damaged beyond possibility of early repair, but this did not preclude using the existing mains for supplying water direct to Vaucelles. Repairs to the mains from Moulines were slow, due to the large number of major breaks encountered, and by the end of September water was available only as far as Tilly la Campagne. Approximately one month later the supply had reached Vaucelles. An alternative was also available by using two pumps on the River Orne at Fleury-sur-Orne, which fed water to the large factory at Cormelles. This pipe was tapped where it crossed the Fleury-Caen road, and a 6-in. overland main laid 2,000 yards into Vaucelles.

The quality of the water was variable, deteriorating during wet weather. This was attributed to small fractures in the mains which permitted contamination from cracked sewers when they were heavily loaded. Bacteriological examinations were on the whole satisfactory, but here again the civilian figures were not reliable and periodical military laboratory tests were made.

Although progress was being made in restoring mains supplies, the water supply was totally inadequate. This was particularly the case in Vaucelles, where the rapidly increasing population was dependent on military water trucks. Twelve water points were established by the end of September, and consisted of either galvanised, canvas or Braithwaite tanks. Each water point provided safe water, sterilisation being done either by hand chlorination or chloramination with a Candy autominor. All water points were visited daily by a Hygiene N.C.O. and the water tested either by comparator or Horrocks box method. In November the maintenance staffs of the water points were gradually replaced by civilian workmen. This was unsatisfactory, for although stores were available the water was rarely adequately sterilised. Finally, British personnel had to operate the military water point again to ensure a safe supply for British troops. The civilian authorities were informed that water from other points was not necessarily safe, and troops were forbidden to drink untreated water from sources other than the military water point.

Sewage Disposal

The battle of Caen completely disorganised the sewage system, which even before the war served only part of the town. Extensive damage was done to the existing sewers, and the sewage treatment plant was destroyed. Had these remained intact sewage disposal would still have been difficult in the absence of main water supplies. It was decided that the sewage plant could not immediately be repaired, and that the sewage system should be restored in three phases. In the first and second phases the main town sewers were to be repaired, and opened into the western and eastern ends respectively of the Bassin St. Pierre, while in the final phase an entrance below the damaged barrage was planned to permit subsequent tidal control.

The damaged sewers were replaced by new ones or by canalisation from the destroyed areas. The main sewers, consisting of underground streams, had been torn open at several places by bomb explosions and the repair work was extensive and tedious. Often, when the tides were high, work had to be suspended because the damaged barrage permitted tidal flooding of the works. The onset of wet weather revealed extensive damage which had not previously been apparent, and sewage poured down the streets and flooded

the cellars in the low-lying part of the town. The cellars were pumped out and new sewers installed as quickly as conditions permitted, but slow progress had to be accepted owing to the shortage of labour and material at this period. Owing to the slow progress in the restoration of water and sewage systems water closets became choked, and the population began to dump human excreta in the streets. Many streets, particularly those blocked by debris, were quickly fouled and another source of fly-breeding established. As similar conditions prevailed in localities not served by main drainage, general emergency measures were applicable to all areas.

Deep trench latrines were constructed in the town for communal use, and military units were instructed to dig deep trench latrines in their billeting areas. In this, a further problem was encountered south of the river, where a dense stratum of rock exists 1 to 1½ feet below the surface and precluded the digging of deep trench latrines. Bucket latrines were instituted and the contents transferred in an improvised conservancy vehicle to the main sewer. Ash faeces incinerators were considered but rejected because of lack of materials for the large number required and the prohibitive fuel consumption involved. Only one conservancy vehicle existed in the town at that time, and this was quite inadequate for local civilian needs. Efforts were made to obtain other vehicles from less damaged towns but without success, and improvised clearance had to be relied on.

The port area had a large mixed non-resident population, consisting of British troops, French civilians and German prisoners of war, and, because of the varying hygiene standards of these people, separate latrines had to be provided and sign-posted in as many languages. In November a further sewage problem arose when the deep trench latrines in the low-lying dock area began to flood, and when Algerian labour was introduced. Bucket latrines were substituted and ash faeces incinerators constructed. A special bucket latrine had to be constructed to conform to Algerian customs and religious beliefs. A cement drum was sunk into the ground as an outer container and a latrine bucket placed inside. Individual squatting platforms were made in a pre-cast concrete, and the whole enclosed in a normal camp latrine structure.

Disposal of Corpses

The provisional estimate of civilian dead from all causes was 2,000, but most of these were buried in temporary graves, as conditions did not permit interment in permanent burial grounds. In addition, a few bodies of Allied and enemy soldiers killed in the battle for Caen remained unburied or inadequately covered.

Pioneers were trained to dispose of all human remains which were exposed during the clearance of debris. Decomposing bodies were sprayed with fluid C and could be handled with ease two hours afterwards. Slowly the civilian services began to function, and bodies were moved from temporary graves to permanent cemeteries. This work was slowed down by bad weather, but by the end of the year 1,270 civilian bodies had been transferred to permanent burial grounds.

Venereal Disease and Its Control

During the battle of Caen all the brothels were destroyed, but by the end of September one licensed brothel was reopened and controlled by the civilian authorities. This brothel was "out of bounds," except to French and Algerian troops and, through strict military police supervision, caused no trouble among British troops.

Because the brothel was excluded, the registered and clandestine prostitutes quickly appeared—over 100 prostitutes being named in the transmission of venereal disease. Limitation of infection was attempted by education and medical treatment of troops and early tracing of their contacts. V.D. lectures were given and films and posters exhibited to all troops. British and American posters are excellent and impress the troops—it was a great pity that they were not available in greater numbers. The importance of welfare was stressed, and without doubt the facilities provided materially assisted in controlling V.D. by offering the troops healthy recreation and keeping them off the streets. However, it

was futile to believe that all troops would henceforth be protected by virtue of their knowledge or by recreational facilities. Therefore the use of unit E.T. rooms or the central P.A.C. and the importance of early treatment were emphasised. Particular attention was paid to the early identification of diseased women, which was achieved only by close liaison between the infected soldier, his medical officer, Provost, and the civilian venereologist.

A weekly meeting with the civilian venereologist and his social assistant was held, and early information often obtained of suspected "maisons clandestines," which were then dealt with by the military police. The results of examinations of contacts who had been traced were also obtained. This is a point of considerable importance and one which is often overlooked. If the contact is found to be free from V.D. then the soldier must be re-questioned and an effort made to discover the actual source of infection.

A criticism has been made that this work is more than is required of the medical services, but there can be no doubt that anything which directly or indirectly controls V.D. is the concern of the medical services, and this course was justified by an average weekly incidence in the area of only 0.8 cases per thousand troops.

Control of Civilian Population

Orders were issued in September restricting the return of civilians, and stating that families were, if necessary, to be billeted on those who still had habitable homes; each family to occupy one room, and to have the use of the kitchen. These orders could not be enforced, and the population estimated at 25,000 in September had risen to 47,000 by the end of the year. Although refugees had moved out to refugee camps, little benefit to the town resulted, owing to the continued uncontrolled arrival of civilians. This resulted in overcrowding, and families were often found living in buildings unfit or unsafe for habitation.

Civilian Medical Services

There was still a skeleton medical service in existence, consisting of a few hospitals, some of which were damaged, and a small number of practitioners and pharmacists who had remained in Caen. The service was quite unprepared for the burden which fell in it with the passing of the battle, and for some time was further handicapped by the loss of the equipment and supplies which had been destroyed. There was a shortage of practitioners in the outlying districts and they were further handicapped by lack of transport. However, by pooling vehicles a general medical service was maintained.

Hospital accommodation, although adequate at first, became hardly sufficient for the needs of the growing population and the additional treatment facilities which became available. Until November there was no in-patient accommodation for 'TB. cases, but when a 'TB. wing was re-established in November admission increased steadily. In October, clinics for anti-typhoid inoculations were opened, and by the end of the year approximately 8,000 people had been protected. On December 21st clinics were restarted for the vaccination of infants, beginning with those born in 1943. Drugs and dressings were on the whole scarce, but were sufficient to meet most normal demands. Deficiencies were usually of a temporary nature, due largely to faulty distribution. However, preparations for the treatment of scabies, which was estimated by the various local authorities to affect 50% of the population, were in constant short supply.

There were no epidemics and the incidence of infectious diseases was not abnormally high. Louse infestation could not be controlled except among the refugees, for whom dusting with A.L. 63 powder was arranged.

Food

The population appeared to be well nourished. There was an abundance of meat and almost unlimited quantities above the ration were available at black market prices. Illicit slaughter houses, which obeyed no known laws of hygiene, opened in obscure places to provide the black market, one even being found under the grandstand of the local racecourse.

There was a shortage of fresh vegetables, due to the lack of distribution facilities, minefields sown on cultivated ground, and lack of man-power willing to work on the land. Minor effects of vitamin deficiency are therefore to be expected. Flour and potatoes were in short supply locally and had to be obtained from other districts.

Clothing

Although clothing was in extremely short supply, the majority of people were adequately covered but lacking any change of garments. When shops finally began to reopen, clothing offered for sale was generally of poor quality and high price, with a surplus of non-essentials. Consignments of clothing sent by Edinburgh for the relief of those who had lost their possessions averted distress in this section of the community.

Liaison with the Civilian Authorities

Many of the outstanding problems required joint planning by more than one service of the military and civil authorities. A weekly meeting was accordingly held under the direction of the Sub-Area Commander at which military, medical, engineering and civil affairs representatives discussed problems with the Mayor and their opposite civilian numbers, thus ensuring co-ordination of action in common interests.

Conclusions

Any extensively damaged town presents its own particular problems of administration, which are influenced by many factors, such as the length of time which has elapsed since its capture, the presence of wounded and refugees, and the degree of disruption of public services.

The immediate supply of safe water to both military and civilian personnel, and the care of wounded and refugees, initially may have to be undertaken under battle conditions. As soon as possible a detailed "recce" of the town must be made and a medical plan formulated. This must provide for: (1) Restoration of water supplies with, if necessary, the temporary establishment of water points. (2) Clearance of garbage and disposal of sewage, temporary latrines being constructed where necessary. (3) Clearance of all organic debris which forms a potential source of disease. (4) Care of military sick and refugees. (5) Burial of military and civilian dead.

To expedite this plan, adequate labour and equipment must be obtained and the H.Q. administering the area should, if possible, have a field hygiene section or detachment at its disposal.

The number of troops occupying the town should be kept to a minimum, and strenuous efforts made to control the influx of civilians to prevent gross overcrowding.

Close liaison with civil affairs is essential, and where there is no civil affairs medical officer the supervision of the public health must become the responsibility of the medical services. Weekly or bi-weekly public health reports should be insisted upon while the threat of epidemics remains.

As organised life of the community starts again, the problem of V.D. becomes more acute, and adequate unit and control prophylactic centres must be made available. The spread of infection must be limited by co-operation with the civilian venereologist and by insisting that the laws restricting the activities of prostitutes are complied with.

It will be recalled that in 1941 the shortage of supplies necessitated limiting the use of liquid paraffin in emulsions to not more than 25% by volume. As supplies have now improved the Orders enforcing this have now been revoked.

The following appointments have been made in the Ministry of Health: Miss E. M. R. Russell Smith, Mr. R. Stanton, Mr. S. F. Wilkinson, Mr. H. Symon, to be Principal Assistant Secretaries; Mr. H. F. Summers to be Private Secretary to the Minister; Mr. A. L. Thompson to be Private Secretary to the Secretary.

THE HAEMOGLOBIN SURVEY

By J. R. MARRACK, D.S.O. M.C. M.D.

During 1942 reports appeared which suggested that the average haemoglobin level had fallen in certain sections of the population and that this reduction was due to inadequate food. After National wholemeal flour became compulsory in the spring of 1942, it was feared that a further decline might follow owing to the interference with absorption of iron by the phytic acid in the flour. As a result of discussions between the Ministry of Health and the Medical Research Council, a Committee was set up which organised a survey of haemoglobin levels throughout the country; the results of this survey have been published as a Special Report.¹

At first sight the actual estimation of haemoglobin would appear to present no difficulty. Haemoglobin is estimated regularly in every hospital as a matter of routine and by many school medical officers as well. But for several years it has been realised that these estimations were unsatisfactory. Owing to inaccurate standardisation of apparatus and variations in technique the results obtained by two careful observers on the same blood and with the same method, might differ by 10% or more. Results were expressed in terms of arbitrary "normals" which might differ by 25%. Without a standard method of estimation and of expressing the results any survey would have been valueless. Fortunately the Haemoglobin Committee of the M.R.C. had already studied methods of estimation and had recommended the Haldane method for general use; arrangements had been made to provide apparatus standardised at the National Physical Laboratory.

One of the obstacles was overcome, but difficulties did not end with the standardisation of the apparatus; further investigations made at the Radcliffe Infirmary showed that the method was liable to large subjective errors. Sixty observers who were taking part in the survey were therefore submitted to a test of their accuracy. Each was supplied with ten samples of laked blood in each of which he estimated the haemoglobin concentration. The concentration was also estimated with a special apparatus at the National Physical Laboratory, and the concentrations found there were regarded as the true values. This examination revealed two types of errors. First, the investigators' readings might be consistently above or, in most cases, below the true values; for example, all but one of the readings of investigator 12 were 3 or 4% low, the remaining reading being 6% low. Second, some of the investigators were erratic; thus the readings of investigator 26 ranged from 86 to 105% of the true values.

How far do these errors affect the value of the results of the survey? The means of the readings of three-quarters of the investigators fell within the 92.5 and 99.9% of the mean of the true values; the mean of all the readings of all the investigators was 96.1% of the true mean. So it might be expected that, if they were examining the same batch of people, the majority of investigators would agree within $\pm 4\%$; but even the more consistent may differ in their readings by as much as 9.9%. It was found that exclusion of contributions of the investigators that differed most widely from the mean would not alter significantly the mean level of haemoglobin of any group of individuals, with the exception of employees in locomotive and carriage works; but, owing to the differences between the readings even of the more accurate observers, no significance should be attached to small difference between the levels found in different groups. The 4,561 men and 6,787 women examined were not a fair cross section of the population. Investigators inevitably made their estimations among groups of people to whom they could gain access and on subjects who were willing. Of the men, 1,442 were workers in metal factories; laboratory workers, civil servants, and police were certainly over-represented, and coal-miners and agricultural workers under-represented. Among the women there were nearly as many nurses (1,155) as housewives (1,253); W.A.A.F. and civil service also were over-represented. But as no one group, except the employees in locomotive and carriage works, already mentioned, and textile workers had mean haemoglobin levels much below the general means for

men and women, it is probable that the haemoglobin concentrations found were fairly representative of those of the people of the country as a whole.

When we look back to the years before the war for investigations of haemoglobin levels for comparison, we meet with two obstacles. First, we are doubtful about the apparatus used in most of the investigations; second, most of the subjects in these past surveys were not fair samples of the population. Either they were healthy students, laboratory workers, nurses and hospital staff, examined with a view to establishing a "normal" haemoglobin level, or they were drawn from the poorer sections of the working class. The most representative sample was that of Jenkins and Don² (1933), who used a different method of estimations; but their subjects were selected, healthy persons.

We find that students, nurses, and laboratory workers have much the same amounts of haemoglobin in their blood as they had before the war. It is doubtful, however, whether the mothers of children, attending a hospital in a relatively poor part of London, who were studied by Mackay³ (1935) were comparable with the housewives of this survey; the women in the poorest classes in Aberdeen, studied by Davidson and Fullerton in 1935, certainly are not. Even the babies, aged 5 to 12 months, of this survey may have been chosen from among wealthier families than those of Mackay's³ (1931, 1933) reports. Mackay (1935) also estimated haemoglobin levels among pregnant women in a rescue home, but these again may not be comparable with the general run of pregnant women. In other studies on pregnant women other than that of Davidson among the poorest classes in Aberdeen the standardisation of the instruments is questionable; that of Boycott⁴ (1936), in which surprisingly high figures were obtained, was no exception. More can be learnt from another recent report by Fullerton *et al.*⁵ (1944), who found less anaemia among young children and pregnant women of the poorest classes of Aberdeen in 1943-44 than in 1935. But, were there any "poorest classes" in Aberdeen in 1943 comparable with those of 1935?

There is, however, evidence of a change during the course of the war. Yudkin⁶ (1944) found definitely higher figures in 1942 among men and women working in factories in Birmingham than he had found in 1941. Among pregnant women of the middle and artisan class, Hamilton and Wright⁷ (1942) found exceptionally low levels in 1942. Davidson found low figures among women attending ante-natal clinics in Edinburgh in 1942, and considerably higher figures in 1944. In the 1943 survey the mean levels found among women attending ante-natal clinics were well above the low levels of 1942 and the number of women with definite anaemia was relatively small. Among school children, Wills *et al.*⁸ in 1941-42 and Davidson in 1942 found low levels. Both Davidson in 1944 and Fullerton⁵ in 1943 found more satisfactory levels, which are confirmed by the results of the 1943 survey. It is probable that this deterioration during the early years of the war, with subsequent recovery, is related to the food supply. The charts in *Food Consumption Levels in the United States, Canada and the United Kingdom* show that the nutrition of the community was at its worst in 1940 and 1941; the difference between these and subsequent years was greater than these charts show, as people had not in the earlier years adapted their habits to the changes in food supply. Any decline in haemoglobin levels during the war took place before National wheatmeal flour, with its high content of phytic acid became compulsory.

How far can we regard the results of this survey as satisfactory? To make comparison with results found in other countries in which the Haldane method is not used, we have to translate "percentages of normal" into absolute units.

¹ *J. Hyg., Camb.* (1933), **33**, 36.

² *Lancet* (1935), **1**, 1431.

³ M.R.C. Spec. Rep. Series, No. 157. H.M.S.O., 1931; and *Arch. Dis. Child.* (1933), **8**, 221.

⁴ *Lancet* (1936), **1**, 1165.

⁵ *Brit. Med. J.* (1944), **2**, 373.

⁶ *Public Health* (1944), **57**, 109.

⁷ *Lancet* (1942), **2**, 181.

⁸ *Brit. Med. J.* (1941), **2**, 333.

⁹ *J. Hyg., Camb.* (1942), **42**, 305.

According to King *et al.*¹¹ (1944) and MacFarlane and O'Brien¹² (1944), 100% Haldane is equivalent to 14.8 or 14.7 g. of haemoglobin per 100 ml. Taking the first figure, we get the means found among male students, laboratory assistants, and scientific staff in this survey to be 15.6 or 15.7; the weighted mean of observations on 780 individuals in comparable groups in the U.S.A. was 15.6; similarly among female students, nurses, hospital staff, clerical workers, and laboratory assistants mean values in the survey ranged from 13.5 to 14.2; the weighted mean of 310 in similar groups in the U.S.A. was 13.4. The mean values among men as a whole (unmarried 15.2, married 15.1) are very close to the mean value of 15.0 found by Nelson and Stoker¹³ (1937) among urban and suburban post office clerks and postmen, men in civilian conservation camps, and soldiers in the U.S. Army, in or near Kansas City. The means found among children compare favourably with any found in the U.S.A.

Although this survey affords no evidence of any deterioration in the fourth year of the war the results are not wholly satisfactory; there is a wide spread between different groups. The numbers included in the groups with the lowest means were small, but no group even if small should present such low levels as found among textile workers. The incidence of low values between the ages of six months and six years is still unduly high. Turning to Fullerton's⁵ (1944) investigation, we find that unsatisfactory levels may be seen among adolescents.

This survey raises the question: What are the causes of low haemoglobin levels? Possible causes are discussed at the beginning of the report. Analysis of the figures found shows that during the age period 20 to 50 years women who have borne children have lower levels than childless women. Is this effect of child bearing due to the extra demand for iron or to other factors? We can well understand the occurrence of low levels among people who have suffered from periods of unemployment and destitution, as in the town in Pennsylvania mentioned by Mack¹⁴ (1941). But why should men in a civilian conservation camp in Kansas, living a healthy life with abundant food, in whom no evidence of ill health was found on thorough and repeated physical examination, have lower levels than those found among factory workers in Britain or, for that matter, among women in the W.A.A.F.? And why, in the present survey, should civil servants, lower and higher grades, male and female, have higher levels than most factory workers, after three years during which there had been little difference in the nutritive value of the diets of different classes, other than the very poor or wealthy?

Proteins were estimated in the serum of 353 blood donors; the mean value found was 6.56 g. per 100 ml., which is surprisingly low. The mean serum protein of 100 Canadian soldiers was 6.78, which is also somewhat low. It is unfortunate that the standardisation of estimation of serum protein had not been studied as fully as had haemoglobin estimation before this survey was made. There is evidence that some of the techniques used for estimating nitrogen by the Kjeldahl method give results that are some 10% too low. The method used in this survey is liable to give low results and appears to have been somewhat inconsistent as well.

This haemoglobin survey is, we believe, the largest that has been made in any country. It gives us information on one aspect of the state of health (as distinguished from the occurrence of disease) among a wide section, if not a strictly representative cross-section, of the population, not selected owing to their favourable or unfavourable environment. It would be a thousand pities if, now that we have a base line, such surveys were not repeated periodically. It should be possible to devise methods, both more accurate and more simple than the original Haldane method, which could be used even more extensively. But the results of the test of the investigators who took part in this survey cast doubts on the value of much haemoglobinometry. If the results obtained by experts, using one of the more accurate methods and standardised apparatus, can differ so widely, and if many of these experts are so erratic, are estimations by less experienced workers, using less accurate methods, anything but waste of time?

¹¹ *Brit. Med. J.* (1944), **1**, 250.

¹² *Brit. med. J.* (1944), **1**, 248.

¹³ *Folia Haemat. Lpz.* (1937), **58**, 333.

¹⁴ *Milbank Mem. Fund. Quart.* (1941), **19**, 282.

For surveys, if not for other types of investigation, standardisation is essential. Methods of measurement and modes of expressing the measurements must be accepted, so that the results of different observers in any one survey, and the combined results obtained in different surveys—possibly at different times and in different countries—may be comparable. This applies not only to estimations of haemoglobin but to all other tests used—estimations of serum proteins, ascorbic acid and vitamin A in blood, etc. It is not necessary that one standard method should be prescribed; but methods should be compared, and, if they do not agree, the relations between the results that they give determined. The results should be expressed in absolute units; "normals" and "indices" should be discarded. The Haldane method of estimating haemoglobin, although one of the best, is far from ideal. It may be claimed that the "100% Haldane" now established is, in a way, an absolute unit; but it is not one that will be accepted in other countries. There are difficulties in the way of translating the results obtained by this method into the more acceptable units, as shown by MacFarlane and O'Brien¹² (1944). Also, the personal factor plays a large part in readings by this method. Other methods are relatively difficult and time-consuming. There is no denying these obstacles; but the value of the surveys, which are now becoming more numerous and extensive, depends on overcoming them.

NEWS AND SUMMARY

HEALTH CONFERENCE*

Following the precedent established in 1942, the County Borough Group of the Society held an annual meeting and conference as a separate event this year. Formerly it was the practice of the Group to arrange its annual meeting during the Congress of the Royal Sanitary Institute. This year the members thought that a separate meeting gave them more time for the consideration of problems peculiar to county boroughs, and it was agreed that the war-time precedent be accepted for future years.

The 1945 meeting was held in Oxford. Some fifty members attended under the presidency of Dr. A. Massey. Among the members present were Sir W. Wilson Jameson and Dr. J. A. Charles, of the Ministry of Health. The inaugural dinner was held in Hall at Wadham College on July 13th. Dr. Massey, in proposing the toast of the guests, referred to the important part played by the public health service during the war in maintaining the health and morale of the nation. The Mayor of Oxford and Sir E. Farquhar Buzzard replied to the toast. On July 14th the Mayor gave an official reception for members at the Town Hall.

Dr. R. H. H. Jolly was unanimously elected next year's President of the Group to succeed Dr. Massey; Dr. J. Greenwood Wilson was re-elected Hon. Secretary, having recently succeeded Dr. Gordon Lilico in this office.

SOCIAL MEDICINE

An outstanding feature of the conference was an address on July 15th by Prof. Ryle, holder of the Chair of Social Medicine in Oxford University. He described the pioneer work being sponsored by the Institute of Social Medicine under his direction. He emphasised the importance of close association between an academic department of this kind and those more practically concerned with public health and the problems of its application. He briefly reviewed the methods of social pathology, including the analysis of morbidity and mortality data and their correlation with social, industrial, and environmental backgrounds. Prof. Ryle compared the technique of the specific social medical survey with that of more orthodox clinical studies, and stressed the need for social experiments in varying communities. In particular, he called attention to the work of the Bureau of Health and Sickness Records, set up in Oxford with the financial aid of the Nuffield Provincial Hospitals Trust. He was asked many questions regarding the work of the Institute, including questions on industrial sickness, absenteeism, the incidence of endemic goitre, a survey of child health, and the need for morbidity statistics.

HEALTH EDUCATION

Another paper which led to an interesting discussion was that given by Dr. Robert Sutherland on the work of the Central Council for Health Education. Dr. Sutherland said that the task of the Central Council was to make the community dissatisfied with everything except the best in communal and individual health. This involved the spread of knowledge, and meant also teaching the community how to behave so as to reduce the impact of forces unfavourable to health. Health education, said Dr. Sutherland,

* A report of the Annual Meeting and Conference of the County Borough Group of the Society at Oxford, July 13th-15th, 1945.

¹ M.R.C. Spec. Rep. Series, No. 252. H.M.S.O., 1945.

was not simply a question of propaganda. It was a question of a way of living. The Central Council's long-term policy was to influence the individual not only to make the best of his environment, but to modify it to his advantage. The Central Council was, however, primarily tackling the short-term task of spreading knowledge. In recent years, the Council had experimented in the wider field, and this aspect of its work would receive continuously increasing attention. The Council would especially concentrate upon educating for health all those persons who were themselves educators of youth in one way or another, including the parent, teacher, the youth leader, the nurse, and the doctor. Dr. Sutherland paid tribute to the support which the Council received from local authorities, and said that this was in large measure due to the interest and encouragement of the medical officer of health as adviser on health education.

HOUSING

Dr. J. Greenwood Wilson delivered a paper on post-war housing. He devoted his time chiefly to an account of the work of a committee of the American Public Health Association, which had published a report entitled "Housing for Health." He pointed out that there was, in this country, no single co-ordinating influence over the many groups of persons interested in housing problems. There were between 40 and 50 study committees of the various ministries. The Government's Building Research Station had an honourable record of research into the structural efficiency of building materials. In fact, however, little had been done to publish the results of housing research, except through the Building Centre in Maddox Street, London, W.1, and through the "Ideal Homes Exhibitions" sponsored by a national newspaper. Dr. Greenwood Wilson pointed out that these exhibitions, though extremely popular and helpful, were not fully authoritative. He suggested it was high time to fill some of the gaps in our scientific knowledge about desirable housing arrangements, and instanced some investigations in the United States which yielded valuable information on the amount of unnecessary work which housewives had to do in ill-planned dwelling houses. The facts about the hygiene of housing, he said, should be ascertained. Housing exhibitions of the right kind should be a routine part of the national programme of health education. Medical officers of health should take a prominent part in this new approach to housing. "The 'drain-pipe' concept of a medical officer of health's duties," he added, "has been killed. It is my object to incite him to a new interest in housing, and to approach the housing problem from the point of view of a biologist, studying housing conditions from the standpoint of their effects, however remote, on the health of humanity."

THE EDUCATION ACT

A lively discussion on the new Education Act was initiated by Dr. G. C. Williams, M.O.H. for Oxford. Dr. Williams said he wished to put before the conference some of the problems which faced the medical officer of health of a small or medium-sized county borough in the application of the new Act. He outlined several difficulties in relation to special categories of children, including the blind, the deaf, the diabetic, the epileptic, and the delicate child. Routine school medical inspection, he said, had been described as the cornerstone of the school medical service. The shortage of practitioners was responsible for the shakiness of this cornerstone. He felt that intermediate inspections, at all events, might well be done by the best type of school nurse. Dr. Williams observed that if, as appeared to be the case, the local education authority had to accept financial responsibility for every child treated in hospital, his city would be involved in an additional rate of 2d. in the pound. A discussion followed on the question whether payment should be made only for children referred to hospital by the school health authority, or for all children admitted to hospital irrespective of prior arrangement. It was suggested that hospital contributory schemes would, as one result of the new Act, repudiate liability for children's hospital costs, and this, it was argued, would necessitate a financial agreement between health and education committees. Referring to Dr. Williams' observations on the dental services, many members emphasised that school dental services should be preserved as such; others considered that school dental services should be a feature of the wider public dental service vaguely foreshadowed in the National Health Service plans.

BUREAU OF RECORDS

One of the most interesting items on the conference agenda was a demonstration of statistical methods by the Oxford Bureau of Health and Sickness Records. The conference heard a short address by Mr. H. Cotton, Records Officer of the Bureau, in which he emphasised the importance of using the masses of records accumulated by medical officers of health. Later, the group saw the Bureau's punch-card equipment, and had the various processes explained in detail. For demonstration purposes, an analysis was made of cancer patients admitted to hospitals in the Oxford district during the first six months of 1945, showing the distribution of the cases by site and age, group, and sex, calculating the number of patient days for which each group of patients was responsible.

BOOK REVIEWS

Mass Radiography of the Chest. By Herman Hilleboe and Russell Morgan. Chicago: The Year Book Publishers, Inc. London: H. K. Lewis. 1945. pp. 288. Illustrated. Price 21s. net.

This book describes a scheme of tuberculosis control, with special reference to the part played by mass radiography as practised in the United States. There are detailed descriptions of the types of apparatus for different kinds of survey, and much technical radiographic information of value to the director and staff of such a unit. There is a complete account of how a survey is carried out in a factory from the point of view of both the radiographic unit and the management and personnel of the factory. Filing methods are described and discussed, and a scheme is outlined for the further investigation of persons whose films show abnormalities. The chapter on the interpretation of films is too detailed to be a useful summary, and yet not full enough to be a complete account of this aspect of the work; but this does not detract from the value of the book as a whole. There is a series of 47 excellent reproductions of films illustrating various abnormal conditions.

Familial Susceptibility to Tuberculosis. By Ruth Rice Puffer. 1945. Harvard University Monograph in Medicine and Public Health No. 5. pp. 106. Price two dollars.

Infection by the tubercle bacillus is a necessary part of tuberculous disease, but it has long been recognised that some other factors or factors determine whether or not infection shall result in disease. One of these factors is an inherent susceptibility or lack of resistance in certain races, families, and individuals, the nature of which is unknown. This monograph is a statistical attempt to answer the importance of this factor. Comparison is made with other morbid conditions where a familial tendency is recognised; of particular interest is diabetes, in which the complicating factor of infection does not arise and the tendency to the disease appears to behave as if it were a Mendelian recessive. If it could be shown that some similar law operated in the case of tuberculosis it would go far in enabling us to predict an individual's reaction to infection. No such explanation has yet been demonstrated, and all we know is that the members of certain families have an increased susceptibility over the general population to develop tuberculous disease once they have been infected. It is also known that the degree of susceptibility, with its grave prognosis, has not diminished since reliable statistics were available.

The author suggests that the best return for the expenditure in time and money on tuberculosis control would be achieved by concentrating our efforts on the susceptible members of the community, rather than by spreading them over the whole population, who have mostly a high degree of immunity and transmit it to their descendants. This involves a very complete and detailed knowledge of family history which is not easy to obtain, and takes less notice of the risk of infection, which is regarded as almost inevitable.

The Medical Research Council announce that preliminary arrangements have been made for the resumption of Rockefeller Medical Fellowships, to be provided from a fund entrusted to the Council by the Rockefeller Foundation of New York. These fellowships are intended for graduates resident in this country who have had some training in research work in clinical medicine or surgery, or in some other branch of medical science, and who are likely to profit by a period of work at a centre in the United States or elsewhere abroad, before taking up positions for higher teaching or research in the United Kingdom. It is hoped it may be possible to make a limited number of awards during the academic year 1945-46, depending on the availability of candidates and facilities for travelling.

The wartime upward movement in the birthrate in England and Wales was slightly arrested in the first quarter of this year, although it was well above the average for the same period in the past five years. The Registrar General's return of births, deaths and marriages registered in the quarter ended March 31st, records a total of 177,893 live births, representing a rate of 17.0 per thousand compared with 17.4 in the same quarter last year. For the five preceding first quarters the average rate was 15.2. The rate for the March quarter of 1918 was 17.5.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

ANNUAL LUNCHEON

For the convenience of the Minister of Health the time of the annual luncheon on Friday, Sept. 21st, has now been changed to 12.45 for 1.15 p.m. Any seats not booked by Sept. 10th will be allotted in order of priority to members of the Society who have notified their wish to bring guests. Tickets (10s. 6d., including gratuities, but not wine) are obtainable from the Acting Executive Secretary, Society of Medical Officers of Health, Tavistock House South, Tavistock Square, London, W.C.1. A meeting of the Society's Council will be held before the luncheon on Sept. 21st.

NORTH-WESTERN BRANCH

President: Dr. V. T. Thierens (M.O.H., Blackburn).

Hon. Secretary: Dr. J. E. Spence (M.O.H., Eccles).

A meeting of the Branch was held in Manchester on March 9th. The President was in the chair and 30 members were present.

The President referred to the great loss the Branch had experienced by the death of Dr. F. A. Sharpe, M.O.H. of Leeds.

The following joint officers of the Maternity and Child Welfare and School Medical Sub-groups were unanimously elected: President, Dr. E. H. Walker; Hon. Secretary, Dr. M. E. Cliff; Committee: Drs. Bennett, Wilkinson, Sproul, Kershaw, Milligan, Jenkins, Spence, Keddie, Gorman.

Dr. Kershaw then occupied the chair and introduced Mr. W. Sayle Creer, who gave an address on normal and abnormal deformities in children. He dealt with the cause and treatment of various postural defects affecting the spine, knees, and feet, and showed an excellent film dealing with the anatomy, cause and treatment of defects of the feet, particularly of pronated feet. A vote of thanks was accorded to Mr. Sayle Creer for his interesting and informative address.

DENTAL OFFICERS' GROUP

President: Capt. A. Quentin Davies, A.D.C. (D.O., Glamorgan C.C.).

Hon. Secretary: A. Gordon Taylor (D.O., L.C.C. Hospitals and Institutions).

A meeting of the Council of the Group was held at Tavistock House, London, on May 5th, with Mr. J. F. Pilbeam in the chair. Group representatives on the following bodies were elected as follows: Council of the Society, Mr. A. Gordon Taylor; Joint Committee of Groups, Miss W. M. Hunt, Mr. A. G. Taylor, Mr. C. R. Wilshaw; Tuberculosis Group Committee, Mr. P. G. Oliver; Central Council for Health Education, Mr. J. F. Pilbeam; Child Study Society, Miss W. M. Hunt; Observer on Committee of Public Dental Officers' Group, British Dental Association, Mr. A. G. Taylor.

The subject of dental instruction in the syllabus of training for health visitors was discussed. The Chairman reported on progress made in regard to salary scales. Mr. A. G. Taylor presented his report as Group Representative on the Council of the Society. Certain points in connection with the Education Act, 1944, and subsequent directives were discussed. The Hon. Secretary stated that it was hoped to hold regular meetings of the Group again in the autumn.

A general meeting of the Group was held on May 5th. In the absence of the President, Mr. J. F. Pilbeam occupied the chair. The general expectancy that the end of hostilities in Europe would be announced over the week-end obviously affected the attendance, but those present enjoyed a most interesting address by Dr. Robert Sutherland, Medical Adviser and Secretary to the Central Council for Health Education, on the technique of lecturing to lay audiences. Dr. Sutherland advised speakers never to show any sign of annoyance if the audience is small, and gave the following precepts: Remember you are probably speaking to the cream of the people to whom you wish your message to reach. Do not explain that you are not fitted to deal with your subject; the chairman has probably told the audience that you are. Learn by your own mistakes and copy the technique of others who are successful, but do not go so far as to lose your own naturalness and sincerity by so doing. Find out beforehand if you can what is the purpose of the meeting and why it has been called and is the type of audience to whom you will be speaking. Then ask yourself: "Why am I doing this?" Your answer must be truly altruistic and have no ulterior motive. You must in fact be sincere. Consider the cultural background of your audience. Then plan your talk. Read up any notes you have on the subject, and other literature. Any points you find hard to remember are not likely to be important to the man in the street. The talk should proceed in a logical sequence. Thought should be disciplined. Talk in simple language without technical terms. Use language your audience will understand, but try to avoid giving the impression that you are "talking down." Use homely language about things they understand, and any stories should be about things with which the audience are familiar. Arrange your material and prepare your headings. Then memorise them. Or you can write

them down if you are nervous and think this will give you moral support. Avoid if you can standing behind a table or desk but get up on a platform. This is a strong psychological point in your favour as is a strong light thrown on to the speaker.

Arrive in good time; lateness creates an unfavourable impression. Look interested in the audience and do not appear bored by what goes on before your turn to speak. Try not to show off. Avoid mannerisms and poses. Pay the audience the compliment of coming well-dressed. The audience like a speaker not to be too obviously cultured. A little local accent, if you possess it, is not a disadvantage. Produce your voice consciously and enunciate your words carefully and do not speak too quickly; but think of these points before you get to the hall and when practising and not when you are actually delivering your lecture. Do not be self-conscious about your phrasing and accent. It is a good tip to take several deep breaths while the chairman is introducing you but do not overdo this to the extent of giving yourself physiological apnoea.

Sometimes films, diagrams and drawings on the blackboard may be of assistance. A story of some experience familiar to the audience is helpful. You should start off by trying to arrest their interest. It is advisable to ask the chairman beforehand how long you are expected to speak.

A good lecture should stimulate questions and you should welcome them however silly they may seem. Say if you can: "I am glad that point has been raised." If you get a fanatic in the audience who disagrees with you, be unequivocal with him but do it courteously. Do not make fun of such a person. Finally, if anyone tries to score off you, do not hesitate to score off him if you can. A good discussion followed the lecture and Dr. Sutherland suitably replied. He gave the duties of a chairman as follows: To tell the audience why the subject is important, to state who is the speaker and why he is able to speak with authority, and to see that a vote of thanks to the speaker is given. A vote of thanks to Dr. Sutherland was carried by acclamation.

MATERNITY AND CHILD WELFARE GROUP

(Joint meeting with School Medical Service Sub-group.)

A meeting was held in Manchester on Friday, May 11th. Dr. E. H. Walker was in the chair and 20 members were present.

The meeting was addressed by Dr. W. H. Patterson, Medical Superintendent of Booth Hall Children's Hospital, Manchester, on the problem of threadworms. Dr. Patterson gave an interesting survey of patients suffering from threadworms and admitted to hospital for investigation and treatment. He stressed the difficulty of carrying out preventive measures in normal family life, and ended on rather a depressing note when he left the members with the impression that as far as our present knowledge goes there is no cure for this condition. A discussion in which many members took part followed the address, and a vote of thanks to Dr. Patterson was carried.

Dr. Kershaw and Dr. Cliff were elected as representatives on the Executive Committee of the Maternity and Child Welfare Group of the Society.

YORKSHIRE BRANCH

President: Dr. J. A. Fraser (C.M.O., Yorks North Riding).

Hon. Secretary: Dr. J. M. Gibson (M.O.H., Huddersfield).

The annual luncheon of the Yorkshire Branch, with the President presiding, was held in Leeds on June 1st.

In addition to the chief guests—Dr. Peter Macdonald, Chairman of the Representative Meeting, B.M.A., and Dr. J. A. Charles, Deputy to the Chief Medical Officer, Ministry of Health—48 members and their guests were present. The monthly Council meeting and the ordinary meeting were not held on this occasion. Dr. J. A. Fraser, President of the Yorkshire Branch, presided at the luncheon.

In proposing the toast, "The Society of Medical Officers of Health," Dr. Macdonald said that he was intensely interested in the duties and functions of medical officers of health, and during the past ten years had gained a much greater knowledge about their functions. He should have been attending a meeting of the Public Health Committee of the B.M.A. that afternoon, when the revised scale of salaries for medical officers of health was one of the chief items on the agenda. There would be a hard fight before this scale was finally approved, as several bodies had to be convinced before it was generally accepted. He hoped, however, that in the end it would be accepted.

Dr. J. A. Charles, in replying to the toast, said that medical officers of health were standing at a series of crossroads. First they stood as individuals and secondly as members of a great profession. Sooner or later they were going to have to take decisions which would not allow them to go back. Great difficulties would have to be faced and met. Decisions, important both to the medical profession and to members of the public health service, would have to be taken. He sometimes felt that the medical profession did not see what an opportunity lay before it, and how great a contribution it could make to the future of the

English people. He was quite certain that if the medical profession was to go forward unitedly, the members of the public health service might have to relinquish a little of the work they had hitherto regarded as their purview.

The toast of "Our Guests" was proposed by Dr. H. M. Holt, M.O.H. for Keighley, and Sir George W. Martin, K.B.E., Chairman of the Yorkshire Regional Hospitals Council, suitably replied. Mr. S. J. Batchelder, M.B.E., Secretary of the Leeds Chamber of Commerce, also spoke.

Dr. J. Johnstone Jervis, in proposing the toast of "The President," referred to the extremely successful year so far experienced by Dr. Fraser.

Dr. J. A. Fraser, in reply, thanked Dr. Jervis for the way in which he had spoken about him. He also thanked all who had assisted at the meetings of the Yorkshire Branch during his year of office, and particularly the speakers who had given their time in preparing addresses and giving them to the members of the Branch. Before the members and guests departed, the President thanked the Hon. Secretary for the work he had done in arranging the luncheon.

MIDLAND BRANCH

President: Dr. H. B. Binks (M.O.H., Stafford).

Hon. Secretary: Dr. H. Paul (M.O.H., Letchworth).

The fifth meeting of the Session was held at Birmingham on March 1st. The President, 33 members, and one visitor were present.

Dr. C. Fraser Brockington addressed the meeting on the future development of our midwifery service. He stressed the importance in a midwifery scheme of the M.O.H., who was the only person who could combine the preventive and curative sides of the service. Confinement should take place, if possible, in the home rather than in a hospital; a baby born at home had a much better chance. However, many homes were totally unsuitable. But institutions should be maternity homes and not hospitals to which only abnormal cases should be sent. He favoured small maternity homes—not more than 40 beds—and also recommended ante-natal and post-natal hostels. The ante-natal homes could be easily run with a staff of one midwife and one cook. Post-natal hostels needed more elaborate facilities and staff.

Dr. Brockington approved the system by which special officers carried out the ante-natal work and combined this with educative work and teaching in health. He was inclined to limit the functions of the obstetrician to the confinement and after care. He would not exclude the general practitioner from the midwifery scheme.

He pressed for a routine Wassermann examination for all expectant mothers, and discussed the desirability of compulsory powers for this.

The interesting discussion showed the diversity of opinion and touched on the question of hospital versus home, the ideal size of maternity homes, the administration of ante-natal and post-natal hostels, the relative positions of the doctor, midwife and obstetrician, and the various systems of co-ordinating ante-natal care with the actual confinement. The meeting was divided on the question of the desirability of compulsory powers for Wassermann examinations.

A vote of thanks was accorded to Dr. Brockington.

EASTERN BRANCH

President: Dr. V. R. Walker (M.O.H., Lowestoft).

Hon. Secretary: Dr. D. E. P. Jolly (Assist. M.O.H., Ipswich).

A meeting of the Eastern Branch of the Society was held at Ipswich on July 28th, 14 members and several guests being present, and the President occupying the chair.

The minutes of the last meeting were read and confirmed.

The election of officers of the Branch for the Session 1945-46 then took place. The names will be published in a later issue.

Through the services of the Ministry of Information and the Central Council for Health Education a film show was made available. This was very much appreciated. The Branch also had the opportunity of viewing the new display of posters for the venereal diseases campaign.

SOUTHERN BRANCH

President: Dr. Catherine Avery (M.O.H., Winchester R.D.C.).

Hon. Secretary: Dr. H. C. Maurice Williams, O.B.E. (M.O.H., Southampton).

A meeting of the Branch was held at Southampton on July 25th. There were nine members and two visitors present and Dr. C. H. Avery was in the chair.

The minutes of the meeting held on May 25th were approved correct and signed by the Chairman.

It was with sincere regret that the President reported the death of Dr. H. J. Phillips, M.O.H., Worthing, who had been a member of the Society for many years. It was resolved that an expression of sympathy be sent on behalf of the Southern Branch to his widow.

Officers for the Session 1945-46 were elected.

Major Penn gave a very interesting talk on the treatment of syphilis and gonorrhoea in the American Army, and there was a general discussion.

The members afterwards, under the direction of Colonel D. M. Monserrate, U.S. Army, made a tour of an American Transit Camp.

The National Institute for Research in Dairying have published a pamphlet, "Milk and the Consumer," which consists of a paper by J. G. Davis, D.Sc., Ph.D., reprinted from *Food Manufacture* (July, November, December, 1944) and which is illustrated with photographs showing modern HT-ST plant, milking houses, etc. There is an interesting table showing the relative consumption of different foodstuffs in the United Kingdom; we consume roughly the same weight each of cereals (including flour), potatoes, and milk (about 4½ lb. per head per week). The figure for meat is about 2½ lb., and for sugar and other vegetables and fruit about 1 to 1½ lb. The average expenditure on food in 1939 was about 9s. per head, but many people were spending less than 5s. per head. (The corresponding cost of the B.M.A. standard diet was 6s. 8d.)

Dr. Davis's article gives useful hints to the housewife on the care of milk. He then proceeds to a discussion on pasteurisation, reforms in dairy industry, and methods of increasing production. He advocates certain methods of reducing the price of milk to the consumer and of increasing consumption—pointing out that in the U.S. milk consumption is normally twice as high as it is in this country. He thinks that the reasons for this are firstly that the American public can be confident of a safe milk supply, tuberculosis being rare and pasteurisation compulsory in most cities and towns; secondly, that the percentage of Jersey cows is higher, these cows producing more palatable milk; and thirdly, that through milk bars and drug-store counters milk is more readily available to the consumer at all hours of the day.

The Ministry of Health announces that more children have been killed by diphtheria during the war than by bombs. The total number of children under 15 in England and Wales who lost their lives as a result of air raids is 8,000. Nearly 9,000 died from diphtheria. This is in spite of the fact that since the national campaign for immunisation against diphtheria started the annual total of deaths has been reduced year by year. More than 5,000,000 children have been immunised but 3,000,000 remain unprotected. The Ministry of Health has, therefore, launched a new summer campaign. Local authorities are organising special publicity campaigns in their areas, using press advertisements, posters, leaflets and cinema slides to support personal explanation and persuasion. The main aim of this year's campaign is to get at least half a million babies protected before they reach their first birthday.

CORPORATION OF GLASGOW

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

Applications are invited for the post of Medical Officer of Health for the City of Glasgow from qualified medical practitioners who are registered in the Medical Register as holders of a Diploma in Sanitary Science, Public Health or State Medicine. The Medical Officer of Health is also Port Medical Officer for the Port of Glasgow.

The duties comprise the administration of all the statutory health and sanitary services of the Corporation.

The post is due to fall vacant at the end of March, 1946, and the new Medical Officer of Health will be expected to take up duty at the beginning of April, 1946, or as soon thereafter as possible.

Salary at the rate of £1,500 per annum, rising by annual increments of £50 to £2,000 per annum, plus war increase, and with £50 per annum additional for Port duties.

The appointment is subject to the provisions of the Corporation's Superannuation Scheme and the successful candidate will be required to pass a medical examination.

In order to allow time for candidates now abroad or in H.M. Forces to apply, the last date for receipt of applications has been fixed at October 1st, 1945. Applications should be accompanied by copies of not more than three testimonials or the names of referees.

WILLIAM KERR,
City Chambers, Glasgow.
June 28th, 1945.
Town Clerk.

Subscription 31s. 6d. per annum in advance.
Single copies 2s. 6d.

"Public Health" is the Official Organ of the Society of Medical Officers of Health and a suitable medium for the advertisement of official appointments vacant in the health service. Space is also available for a certain number of approved commercial advertisements. Application should be made to the Executive Secretary of the Society, at Tavistock House, Tavistock Square, W.C.1. Telephone: Euston 3923. Telegrams: Epidauros, Westcent.

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