pressure show some fall in pressure before death and that the diastolic pressure falls proportionally to the systolic pressure; (3) that cases of acute nephritis show rather pronounced impairment of all the renal functional tests. Another clear and valuable contribution is on the laboratory as an aid in the treatment of diabetes. This is from the pen of Dr. Leon Jonas, who deals particularly with tests designed to determine the severity of a case and also to act as guides in treatment. He emphasizes the need of using methods which have passed out of the experimental state, and the great value of laboratory work. In addition to these there are papers dealing with the chemistry of acidosis and the treatment of auricular fibrillation by quinidine sulphate. The publication is well printed, the illustrations are good, and both the medical consultant and the laboratory worker will find its perusal valuable.

The third edition of *Lang's German-English Dictionary of Terms Used in Medicine and the Allied Sciences*¹¹ has been edited and revised by Dr. M. K. MEYERS. Over 4,000 new terms have been incorporated, and this edition contains approximately 53,000 definitions. The volume is well bound and clearly printed, and will be very useful to those engaged in the task of translating German medical publications.

The second edition of the textbook of infectious diseases,¹² by the late Professor G. JOCHMANN of Berlin, who died of typhus contracted from Russian prisoners of war in January, 1915, has been published on the occasion of the centenary of the foundation of St. George's Hospital, Hamburg. Professor HEGLER of that city, whose knowledge of infectious diseases was gained not only in Germany but also in the Balkans during the campaign of 1913, as well as in Turkey, Palestine, and Mesopotamia during the world war, in addition to subjecting the work to general revision has added new chapters on epidemic encephalitis, Weil's disease, trench fever, and trichinosis. The chapters on malaria and blackwater fever have been revised by Dr. NOCHT, and those on varicella, variola, and vaccination by Dr. PASCHEN, who has added a new chapter on herpes. The work, of which the first edition was published in 1914 shortly after the outbreak of the war, has one remarkable feature—namely, that it is said to be the first textbook of infectious diseases published in Germany. Professor Jochmann was well qualified for the task as he had had fifteen years' special experience of this—first at Hamburg, then at Breslau, and lastly at the Rudolf Virchow Hospital in Berlin, where he had been director of the infectious diseases department for eight years before his death. The work is divided into four parts. The first deals with those diseases in which infection of the blood is the predominant feature; under this head are included the enteric group, botulism, varieties of septicaemia, including puerperal fever, acute miliary tuberculosis, Malta fever, plague, relapsing fever, malaria, and blackwater fever. The second part is devoted to the discussion of conditions in which the affection of a definite organ or system determines the character of the disease, such as the various forms of sore throat (including diphtheria), mumps, whooping-cough, influenza, tetanus, dysentery, cholera, cerebro-spinal fever, and acute poliomyelitis. In the third part the acute exanthemata are considered, and the fourth part deals with diseases common to man and animals, such as anthrax, glanders, actinomycosis, rabies, foot-and-mouth disease, and trichinosis. An appendix contains a description of methods of disinfection, an enumeration of the infectious diseases notifiable in Prussia, and a short list of the literature (almost exclusively German) on infectious diseases. The work, which is interspersed with numerous excellent illustrations, many of them in colour, will no doubt fill a gap in German literature.

A little book, entitled *Chronicles of an Army Surgeon*,¹³ consists of rough diaries in which the author records his experiences of thirty-five years' service in the A.M.D. and R.A.M.C., from 1871 to 1905; of ten years, 1905 to 1915, spent in retirement; and of three years' further home service, 1915 to 1918, during the great war. The diaries seem to have been published as originally jotted down, initials and abbreviations of words being used repeatedly on every page; many of the contractions will probably be unintelligible to a civilian. Had the author, instead of publishing his rough diaries, rewritten the whole in narrative form they might have proved an interesting record of service.

¹¹ *Lang's German-English Dictionary of Terms Used in Medicine and the Allied Sciences*. Edited and revised by Milton K. Meyers, M.D. Third edition, enlarged. London: J. and A. Churchill. 1924. (Med. 8vo, pp. 613. 28s. net.)

¹² *G. Jochmanns Lehrbuch der Infektionskrankheiten für Ärzte und Studierende*. Zweite Auflage. Unter Mitwirkung von Dr. B. Nocht und Dr. E. Paschen. Neu Bearbeitet von Dr. C. Hegler. Berlin: Julius Springer. 1924. (Sup. roy. 8vo, pp. xi + 1077; 464 figures. Paper, 12.90 dollars; bound, 13.60 dollars.)

¹³ *Chronicles of an Army Surgeon*. London: John Bale, Sons, and Danielsson, Ltd. 1924. (Cr. 8vo, pp. 78.)

PREPARATIONS AND APPLIANCES.

"Soloid" Urine-Sugar Test Case.

MESSRS. BURROUGHS WELLCOME and Co. have put together a very convenient little case of materials for enabling diabetics who are under insulin treatment to keep watch on the sugar reaction of their urine. The reagents used—alkaline citrate and copper sulphate—are in soloids. These are dissolved in water which has been heated in a graduated test tube, two of which are supplied in the case. Heat is obtained by burning a soloid of hexamethylene-tetramine (hexamine) on a small sheet of asbestos; a soloid of this substance will burn for three minutes with a smokeless flame. From a medicine dropper with rubber bulb four drops of urine are added to the solution in the test tube. Gentle boiling for two minutes will reveal the presence of sugar in amounts as low as 0.1 per cent. The case affords a very handy and simple method for testing the presence of sugar in the urine. We are informed that its price to the medical profession is 5s. 5d.

Cereal Meal.

A cereal food prepared by Messrs. S. Guiterman and Co. (35 and 36, Aldermanbury, London, E.C.2) has been brought to our notice. It contains bran, flax seed, and agar-agar. It is said to act as a corrective of constipation by virtue of the mechanical action of its ingredients, and to be congenial in use because of their demulcent properties. We have examined the product analytically. Its composition agrees with the proprietors' description. Singly, the components have long been known for their specific qualities and have been held in favour in the curative lore of family tradition; being associated together in chosen proportions their beneficial effects may not improbably become enhanced. When cooked according to the directions it yields a porridge which is not unpalatable. A food of this nature deserves to be tried by the public.

A POSSIBLE METHOD OF INCREASING THE SUPPLY OF BREAD.

BY

D. NOËL PATON, M.D., LL.D., F.R.S.,

REGIUS PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF GLASGOW.

In the present state of the country, with its widespread unemployment and poverty, with the cost of living again rising, and with the price of bread again going up, it behoves us to consider very carefully any steps which can be taken to enable the poor more easily to procure the necessary nourishment for themselves and their children.

The most important food of the poor man is bread. The position of bread in the national dietary cannot be better stated than in the words of the Food (War) Committee of the Royal Society:

Bread is the prime foodstuff of the working classes, and it is by the consumption of bread that the mass of people are enabled to produce their daily output of work. . . . The poorer the individual or family, the greater is the actual consumption of bread, as well as the proportion it bears to the total dietary. While among the middle classes bread supplies less than one-third of the energy of the total food they consume, with the poorer families of the working classes bread alone has to furnish more than half of the energy of their dietary. Practically no other food is as cheap as bread; that is, no other food generally available will enable a man to do as much work for the money he spends on food as bread will. The poor man is unable to replace deficiencies in bread by other foods, because all other foods he is accustomed to use will cost him more. As a matter of experience it is found that as bread and other foods rise in price, the poor man actually buys more bread than before, because it remains still the cheapest food available to him.

In 1916 the Food Committee pointed out that by raising the standard of milling from 70 to 80 per cent.—as was afterwards done—there would be a gain of 597,000 metric tons of home-produced flour, provided that the amount of wheat remained the same.

A few words of explanation may here be given. At present the object of the miller is to produce a fine white flour which will, when baked, yield a white bread. To secure this he has to eliminate from the wheat as much as possible of everything except the starch-rich endosperm containing the gluten required for forming a dough. This means that only about 70 per cent. of the wheat goes into flour and the remaining 30 per cent. of offal is sold as food for pigs. This contains a large proportion of the proteins, fats, and ash of the grain, and is a material of high nutritive value. The difference between a flour made from the entire grain milled to 100 per cent. and one milled to the usual 70 per cent. is shown in a table given by Sherman.

	Protein.	Fat.	Carbo- hydrate.	Calories per lb.	Ca.	P.
Flour entire	13.8	1.9	71.9	1630	0.031	0.238
High and medium grade flour	11.4	1.0	75.1	1610	0.02	0.092

The amounts of proteins and fats and the amount of calcium and phosphorus are thus decreased in the finer flours, while the proportion of starch is increased. As regards the bread made from these flours, Sherman gives the following figures:

	Protein.	Fat.	Carbo- hydrate.	Calories.	Ca.	P.
Whole wheat	9.7	0.9	49.7	1113	0.05	0.175
Average white flour ...	9.2	1.3	53.1	1182	0.027	0.093

These figures are somewhat higher than those given by Plimmer on account of the smaller proportion of water. His mean is: Protein 7.2, fat 0.2, carbohydrate 48.1, calories 1036.9. The usual analytical methods for the determination of the fat in breads give unreliable results, as has been shown by Cormack working in the laboratory.

In considering the advantages or disadvantages of raising the standard of milling from 70 to 80 per cent., the Committee had to consider whether it would lead to any serious decrease in the digestibility of the bread. The experiments upon the digestibility of bread then available were very inadequate, and in its calculation the Committee adopted figures which a later and much larger series of experiments showed to be too low. In fact, the result of these later experiments was to indicate that the digestibility of the bread from 80 per cent. flour is as good as that from 70 per cent. flour.

The only loss which has to be considered in this higher grade milling is the offal which is usually fed to pigs, to be used in the form of pork or bacon as human food. As the Committee pointed out, this is a most wasteful method of utilizing the energy of wheat, since the pig uses most of the energy and stores only a small proportion in its body, while a man can use about 96 per cent. of the energy in bread. Hence bread is a much more economical source of energy than pork or bacon. An addition of nearly 10 per cent. to the bread supply of the country would undoubtedly reduce the price.

The Food Committee further considered the question of the possibility of a still higher standard of milling—to 90 per cent. It found that the bread prepared from such flour was "light brown in colour and had a slight flavour of bran." It was quite palatable. In order to determine the actual gain or loss which the use of such bread would involve, a series of experiments upon its digestibility were carried out in Cambridge, London, and Glasgow, on twelve subjects varying in age from 17½ to 46. The diet consisted mainly of the bread to be tested—800 grams being consumed daily. Weighed quantities of cheese, butter, potted meat, fruit jelly, milk, sugar with tea or coffee made up the diet. Throughout the experiment these other foods remained unchanged. During ten days bread from flour milled to 80 per cent. was used; the subjects then returned to an ordinary dietary; then for ten days they took the bread from flour milled to 90 per cent. No such extensive series of experiments upon the digestibility of bread have so far been carried out. The results made independently at the three centres were extraordinarily consistent and gave confidence in their acceptance.

The following table shows the digestibility of the two breads:

	80 per cent. Bread.	90 per cent. Bread.
Energy	96.14 per cent.	94.5 per cent.
Proteins	89.4 per cent.	87.3 per cent.

The digestibility was only about 2 per cent. less in the 90 per cent. flour, so that nearly all the gain of 10 per cent.

is available, except again for the loss of offal. Thus, if necessary, an increase of nearly 20 per cent. in the bread supply might be secured.

There is yet another way in which the insufficient supply of wheat might be supplemented—namely, by admixture of flours made from other cereals—barley, maize, oats, rye, or from soya bean. The most abundant of these in the world's supply is maize, and at the instigation of the Food Committee experiments were carried out upon bread made of wheat flour milled to 80 per cent. with a 20 per cent. admixture of maize flour. These showed that this bread was quite palatable, and that its digestibility was about the same as that of bread made from 80 per cent. wheat flour.

A series of prolonged observations were also made upon the inmates of various institutions, who voluntarily took this bread in place of the despised "war bread" without knowing its nature, and who were generally loud in its praise, many expressing regret that the supply could not be continued. All sorts of symptoms—of course, ascribed to the "war bread"—disappeared under its use!

Although the adoption of the higher standard of milling with or without an admixture of flour prepared from cereals other than wheat would undoubtedly increase the bread supply of the nation and reduce its cost, the vested interests of millers and bakers and the prejudice of the public in favour of whiteness of their bread are probably too powerful to allow of its adoption. The duty of the scientist has been discharged when he has shown how an economy may be effected. It must rest with the people of the country to decide whether it shall be carried out. The medical profession is in a position to give to the public the assurance that they would suffer in no way from the use of breads made from flours prepared as suggested.

Note.—The report by the Food (War) Committee of the Royal Society on the Digestibility of Breads, 1918 (3206), may be consulted. As anticipated, the millers have already shown their hand. *The Miller* of January 5th contains one of the familiar protests against any change in the mode of preparing flour.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

BRITISH MEDICAL ASSOCIATION EVIDENCE.

At the meeting of the Royal Commission on Lunacy and Mental Disorder on January 14th, the Right Hon. H. P. MACMILLAN, K.C., presiding, the Memorandum of Evidence on behalf of the British Medical Association, which was published in the SUPPLEMENT of January 17th (pp. 29-36), was presented by Dr. R. Langdon-Down, who was accompanied at the witness table by Dr. J. W. Bone, Dr. F. H. Edwards, Dr. C. O. Hawthorne, Dr. E. W. G. Masterman, Dr. Christine Murrell, and Sir Jenner Verrall, with Dr. C. Courtenay Lord, Assistant Medical Secretary.

The Chairman said that the Commission had received from the British Medical Association a valuable Memorandum, and the Commission proposed that the Memorandum should be incorporated in its proceedings. He and his colleagues recognized that it was the considered representation of the views of the Association, and they thought it should be preserved in the form in which it had been drawn up, obviously with great care. It was recognized that the Association spoke authoritatively for the profession throughout the country. In paragraph 8 the position with regard to mental disorders was stated in a very useful way. Mental ailments differed from physical ailments in the respect that the former might involve a legal aspect consequent upon the restraint imposed on the liberty of the subject, but there were varieties and degrees of mental ailment which did not necessarily involve restraint. He inferred from the Memorandum that it was the view of the profession that the element of compulsion in the treatment of mental disease was really necessary only in cases where the patient was unwilling to be detained and unable to co-operate in his own treatment, and that the extreme measure of the compulsory order should be the last resort rather than the first. From the crude primitive methods of dealing with mental disorder there had been a progressive development in the conception of mental disease and its proper treatment, but the profession apparently believed that the time was ripe for a further advance.

Dr. Langdon-Down: It must be admitted that medical knowledge in these matters has tended to lag behind medical advances in other fields, not on account of any neglect on the part of the profession, but due to the circumstances which hedge round this question.