

Reviews.

PRESERVATIVES IN FOOD AND FOOD EXAMINATION. By J. C. Thresh, M.D., and A. E. Porter, M.D. London: J. and A. Churchill, 1906. 14s. net.

THIS is an octavo volume of some 500 pages, dealing with the subjects of the title in a comprehensive manner. In Part I. the various chemical substances used in the preservation of food are considered *seriatim*, their action explained, and some account given of their physiological effects. Brief reference is also made to heat and cold methods of sterilisation. In Part II. the ordinary articles of food that are subjected to preservative processes are dealt with, in regard to the necessity or desirability of those processes from a public health point of view. Part III. treats of the colouring matters that are added to, and mineral poisons that may occur in, articles of food and drink. In Part IV. the laws relating to food inspection are considered (in five pages), and the examination, in regard to soundness of meat, fish, dairy products, fruit, vegetables, &c., by naked eye inspection and by microscopical and bacteriological methods; also the examination of tinned meats, and the subject of food poisoning, are fully dealt with. Part V. describes the chemical tests for preservatives and colouring matters, and gives a *résumé* of legal cases in regard to their use.

Perhaps the keynote to the work is struck in a sentence in the preface: "A careful study of all that has been written on this subject, both at home and abroad, and of inquiries made of medical practitioners, leads one to the conclusion that the dangers arising from the use of preservatives have been greatly exaggerated" (p. vi.). Some of the old-fashioned processes, however, such as smoking and salting, come under the writers' condemnation. With regard to the former it is said that "any modern system of preserving which affected the digestibility to a similar degree would be strongly condemned"; and with regard to salting, although the authors allow that salt "cannot with our present knowledge be considered a dangerous substance in the proportions used for the preservation of food, it will be observed, however, that it labours under the disadvantage urged so strongly against the use of other preservatives, viz., that in large quantities it produces ill-effects, that it is contraindicated in certain diseased conditions, and that it may render food less amenable to certain of the digestive processes" (p. 13). The fact that sodium chloride is a natural constituent of the human body in relatively large proportion (about 200 grammes on an average), and that its presence in the dietary is a matter of imperative necessity, surely places this substance in a category altogether different from the artificial preservatives brought under consideration.

The authors' opinions with regard to the hurtfulness or otherwise of boric acid are not to be readily gathered from Chapter iii. Wiley's conclusions that "boracic acid and borax, when continuously administered in small doses for a long period, or when given in larger quantities for a short period, create disturbance of appetite, of digestion and of health," are given on p. 51, and on p. 54 it is assumed that they are justified: but on p. 53 Liebreich's criticisms of Wiley's investigations are summarised, and stated "to be perfectly fair and reasonable"; as, however, Liebreich's conclusion was that "no injurious effect was produced by the administra-

tion of the boron preservatives," *i.e.*, exactly the opposite to that of Wiley, we do not receive much guidance from the authors.

A reasonable criticism is passed on the recommendation of the Departmental Committee of 1901, that salicylic acid should not be used in larger proportion than one grain per pint; lager beer and British wines, fruit juices and syrups, are contrasted; the first-named requires only to be kept for a short time, and would require little preservative; the latter are expected to keep indefinitely and would require more: besides which, the quantity ingested of the latter by any one person is altogether insignificant as compared with that of the former, and is to be measured by ounces instead of by pints, therefore the amount of preservative allowed should be increased.

The "Budde-izing" process with peroxide of hydrogen for sterilising milk, &c., at 50° C. is noticed; it depends on an interaction between the peroxide and the (supposed) enzymes present in the milk, whereby nascent oxygen is produced; it appears to sterilise effectually, without causing any alteration in taste or appearance, but how far the change may affect the nutritive quality of the milk remains to be seen.

The treatment of milk naturally receives considerable attention. Boric acid is, of course, used to a considerable extent; in the table on p. 102, taken from the Departmental Committee's Report, the amount found by Wynter Blyth is erroneously stated as 80 grains boric acid per pint; this figure refers, not to boric acid, but to borax (Report, question 3,439), equivalent to 12·8 grains only, stated as boric acid. The quantity usually added appears to be from 1 or 2 up to 14 or 15 grains per pint; about 4½ grains per pint appears to be the smallest amount that is of any use for delaying the souring process in hot weather. It is pointed out that an infant of four months might easily be taking 3 grains or more daily. The authors are "driven to the conclusion that boric acid, in the proportion necessary to 'preserve' milk, is an undesirable constituent, and that its addition may be associated with considerable danger to health" (p. 106). It is also pointed out that its use, in common with the use of other preservatives, permits of an "unclean" milk being regarded as "clean."

The authors agree with the Departmental Committee's conclusion that formic aldehyde should not be used as a milk preservative; the amount originally added cannot be accurately determined, and there are many opportunities for repeated additions; it certainly appears to interfere with digestion. Salicylic acid is little used, but is regarded as objectionable. It has been suggested that preservatives in milk should not be prohibited, but only limited in quantity, and declaration of their presence made compulsory. This, however, is not approved of.

But perhaps the best argument against the use of preservatives is contained in the fact that "if their use is prohibited, it will be absolutely necessary for dairy farmers to maintain a very much higher standard of cleanliness in and around their cowsheds, and in the actual milking processes, than is often the case. At present, the farmer who pays attention to matters of sanitation obtains no better price for his milk than one who, by addition of preservatives, is able to partially neutralise the effects of the filthy state of his byres. The Cowsheds, Dairies, and Milkshops Order is practically a dead letter in many parts of rural England, but the prohibition of chemical antiseptics in milk should go a long way towards securing the improvements which the Order has failed to effect" (p. 109).

The authors proceed to show that the milk trade of the country can be carried on without the use of preservatives. The Aylesbury Dairy Company have for some years been able to supply about 100,000 persons in London with milk every day, some of it coming from Wiltshire, and some even from Cheshire, 200 miles away; and this without the aid of any preservatives. Mr. Carrington Smith also was able to send 100 gallons a day from his farm in Staffordshire to London (100 miles) without preservatives. The points to be attended to are, first, that the milk should be clean and pure in its origin; secondly, that it should be maintained in this condition, either by the application of heat or of cold. To secure the first condition, the cows must be healthy, and must be kept under healthy conditions, the cowsheds being clean in every particular; also the milkers must be clean and healthy, and the milking must be done under cleanly conditions. To maintain the purity of the milk, it may be cooled down to 50° F., or better, to 40° F., at which temperature the multiplication of the contained bacteria is comparatively slight, and the milk will keep good for twenty-four hours. Difficulties naturally arise in the maintenance of such a low temperature in the summer time during conveyance by rail; the railway companies should provide proper wagons with double roofs. Cooling arrangements are carried out most thoroughly in Denmark by the Copenhagen Milk Supply Company, who have demonstrated the practicability of this method of milk preservation.

The application of heat brings about some changes in the milk, and is therefore open to possible objection: boiling is said to interfere with its digestibility, but the evidence is conflicting. The discussion of this debateable question is not so full or satisfactory as might be wished, considering its importance. Dr. Clement Dukes is quoted as the authority for the statement that the use of cooked (*i.e.*, boiled) milk is the cause not only of infantile scurvy, but of rickets; it is said (p. 126) that there is a fairly general consensus of opinion amongst those who have studied the subject and had the opportunity of making observations, that scurvy-rickets occurs chiefly amongst the children of the better classes, and especially amongst those who take the precaution of boiling all milk before use. It may be doubted if any such general agreement of opinion really exists;¹ but if it be admitted, the danger from the use of such an exclusive diet can only occur in the case of young infants (who may be protected therefrom by suitable precautions), and is non-existent for the much larger number of older children, who are not restricted to a milk diet (and therefore not liable to contract scurvy in this way), but who are, all the same, liable to all the various milk-borne diseases, unless proper measures are adopted to keep the milk pure, or to purify it. If purification be necessary, pasteurisation is undoubtedly the best method in practical use at the present time. The authors, however, seem to hesitate here, as elsewhere; for although on page 126 they appear to join in the "general consensus of opinion" just mentioned, on the next page, after citing the Continental custom of sterilising milk, they say, with regard to the rarity of scurvy and scurvy rickets, that "it is obvious that

¹ See (besides Dr. W. B. Ransom's paper, which is quoted by the authors) Professor Rotch's address at Manchester meeting (*British Medical Journal*, September 6th, 1902); the experience of the *Gouttes de Lait* in Paris and elsewhere, and that of de Rothschild and Abramoff (*British Medical Journal*, May 2, 1903), and of the *Clinique Tarnier* (*British Medical Journal*, February 20, 1904).

the danger of contracting these diseases from the use of boiled milk is very slight indeed, and has been grossly exaggerated."

Summing up, with regard to milk, the authors condemn the use of preservatives, and consider that refrigeration is greatly to be preferred to pasteurisation and sterilisation. This view will meet with general assent, if the existence of, and resultant danger from, specific germs of disease in milk be left out of consideration; as things are at present it would be a bold course to pursue.

An interesting account is given of the butter industry from a sanitary point of view. About half the butter sold in England comes from Denmark and is free from preservatives, except only a little salt; the remainder (Irish, French, Colonial), except such as is produced locally, mostly contains boric acid or borax, usually with a little salt or saltpetre. This is because butter is made all the year round in Denmark, and is consigned to England once or twice a week; in the other countries it is made chiefly between April and November, and is consequently stored for some months. In Denmark and America a great deal of scientific work has been done in regard to dairy products; the micro-organisms concerned in the production of the most appreciated butter flavours have been isolated in the laboratory, and can now be purchased by farmers. They are known as "starters." In Denmark the cream is first pasteurised to get rid of the unnecessary germs, and some milk added, in which the laboratory "starter" has been allowed to propagate. It is then kept at the temperature most favourable to the growth of the particular organism. Objectionable flavours are not due, as generally thought, to the pasture, or to cows feeding on turnips, &c., but to some specific microbes, which can be excluded by appropriate treatment.

It has been found that butter made from pasteurised cream with the aid of a "starter" will keep two or three weeks with only $\frac{1}{2}$ per cent., and for two or three months with 3 per cent. of salt. One half per cent. of boric acid is enough.

In reference to the conveyance of milk in this country the need for special refrigerating waggons is rightly insisted on, such as are now provided by the Great Western, North Western and Great Central Railways, and by the Great Southern and Western of Ireland, but apparently not by any other companies.

Alcoholic beverages, temperance drinks and fruits, jams and vegetables are next considered. In Chapter xiv. meat foods are dealt with. On account of the change in public taste in recent years and the preference for "mild cured" foods, ham and bacon, that are so largely imported from America, are packed "green" (*i.e.*, not salted, or only to a very slight extent) in boric acid; this, although only applied to the surface, is absorbed into the interior of the meat. One consequence is that potted meats in this country almost always contain boric acid. It does not seem that packing in boric acid is absolutely necessary, as a Wiltshire firm exports bacon to India and the Colonies, using a little more salt than usual, extra drying, and then packing in salt (p. 169). In any case the injection of boron preservatives into the substance of the meat is objectionable. The quantity of boric acid that is sufficient to act as a preservative (when used as packing) appears to be 0.25 per cent. of the weight; sometimes 1 per cent. is used. The quantity actually present in the meat has been found to be as much as 0.661 per cent. (= 46.3 grains per lb.) boric acid (Somerset House Laboratory).

Sausages have been found to contain 1.14 per cent. (79.8 grains per lb.) boric acid. This might produce unpleasant symptoms.

Part III. (Chapters xv., xvi.) treats of colouring matters. Some of these are curious, though probably most are harmless. Margarine is very generally coloured (with a coal tar pigment); cheese also is often coloured with annatto, as, of course, is butter; though for this the coal tar yellow, tropæolin, is also used.

The most important pigment, however, used in the food industry from the health point of view is probably sulphate of copper in preserved vegetables (peas, beans, &c.). It is well known that the Departmental Committee on Food Preservatives condemned the use of copper as a colouring matter; one member, however, did not join in this absolute condemnation, advocating only declaration of its presence, and limitation of the amount to a quantity equivalent to 0.5 grain per lb. metallic copper (= 0.07 parts per 1,000). The usual amount found in preserved vegetables is about 2 or 3 grains per lb. of crystallised copper sulphate (= 0.5 to 0.75 grains per lb. metallic copper): as much as $26\frac{1}{2}$ grains per lb. have been recorded. The authors consider that "in the present state of knowledge concerning the action of small doses of copper on the human subject, the desirability of the addition of this substance to vegetables must be largely a matter of personal opinion. On the one hand it is certain that copper is a poisonous substance even in moderate quantities, and it is highly probable that some, if not all of it, in preserved vegetables is in a form which is soluble in the digestive juices. On the other hand, it is certain that if the copper is omitted the vegetables will lose their colour; and it is generally held that the appetising appearance of food has considerable influence on the digestive processes" (p. 183). We quite agree that this is largely a matter of opinion: when the alternative lies between ingesting a metallic poison in a soluble condition on the one hand, or eating peas that do not appear to be quite bright and fresh (as, indeed, who could expect them to be in December?) on the other, we do not think there is much doubt what the opinion of sensible persons would be. *Manet sors tertia* of leaving tinned peas alone altogether, which would not be a great deprivation; at any rate, the public taste might be educated to dislike metallic poisons even in minute quantities and of attractive appearance. We are glad to know that many local authorities are now taking action, and successfully prosecuting persons for selling coppered vegetables as being "not of the nature, substance and quality demanded," and as being sold "to the prejudice of the purchaser."

A good *résumé* is given in Chapter xvi. of the occurrence of mineral poisons in articles of food and drink, arsenic and lead being those chiefly dealt with.

Part IV. (Chapters xvii. to xxvi.) treats of the occurrence of disease in relation to the various articles of food and drink, and their inspection and examination. In chapter xxi. the bacteriological examination of oysters and other shell-fish is considered. The authors are here not clear in their pronouncements. After alluding very briefly to the experiments of Klein and of Houston, it is said (p. 259) that "he would be a bold man who would dare to condemn oysters (and therefore the layings from which they were taken) from a mere bacteriological examination." On the next page we read that "the mere fact that certain bacteria are present in the liquid within the shell or in the body of the fish is no

proof of sewage contamination, but if they are present in large numbers there is presumptive evidence of such pollution." Which course do the authors really advise? What we take to be the correct view is that stated in the latter paragraph: presumptive evidence is surely sufficient to condemn, and if the careful procedure laid down by Houston (Fourth Report of the Sewage Commission, 1904) be followed, the investigator who ventures on a condemnation may be bold but would not be rash. Possibly the authors may have only meant to warn observers against condemnation on account of the mere presence of certain bacteria, but what they actually say is on "a mere bacterial examination," which is a very different thing. The authors do not allude to the work of the Massachusetts Board of Health observers, which agrees with that of Houston, to the effect that, in undoubtedly unpolluted shell-fish *Bacteria coli* is absent, or but very sparsely present. A good description is given of the procedure for detection of *B. coli*, but the little word "not" is omitted in reference to the production of indol (p. 261). When both true *B. coli* and *B. e. sporogenes* can be found in $\frac{1}{100}$ of an oyster it is probable that the batch comes from a contaminated source; the authors would, therefore, probably be bold enough themselves to condemn such oysters as unfit for consumption. A summary of Klein's method, described in his Report to the Fishmongers' Company (1905), is given without comment.

The connexion of outbreaks of disease with milk supplies (Chapter xxii.) is treated rather cursorily: the transmission of diphtheria by milk is considered doubtful; very little is said about enteric fever. It is stated (p. 275) with regard to "blown" tins of condensed milk, that there is no record of any illness resulting from the use of such milk, that young pigs are not affected by it, and that bakers use it in making bread and pastry without apparent ill effects; it should, however, be regarded as unsound. A full account is given of the important case (1905) in which Dr. Sykes pronounced a sample of milk to be unfit for food, owing to the presence of cow dung, &c., and which was subsequently found by Dr. Eyre to contain virulent tubercle bacilli. The St. Pancras Borough Council prosecuted, the case was heard at the Marylebone and Tower Bridge Police Courts, and the defendant was fined £25 and costs. This is the only hitherto recorded case in which milk has been dealt with by seizure as an "unsound food." As the authors say very truly (p. 280): "A few prosecutions of this kind would probably effect a greater change for the better than all the bylaws which can be devised." What is wanted is a vigorous carrying out of existing powers rather than additional refinements of legislation.

In Chapter xxiii., which treats of the examination of milk, a good method is described for making a quantitative test of the dirt present. Take a litre of milk, allow to stand in a long glass for three or four hours, siphon off the upper 975 cc., to the remaining 25 cc. add 500 cc. aq. destill. and again allow to stand; repeat until the water remains clear; transfer deposit to a tared filter, dry and weigh. "A really clean milk will not yield more than 3 to 5 mgms. of dry residue; ordinary samples may yield from 10 mgms., or even more, according to the degree of foulness" (p. 284). If more than 10 mgms. are found, and the microscopic examination of the residue, obtained by a centrifuge, shows that it is of objectionable character, the milk may fairly be considered unsound,

and unfit for human consumption. Full details are given of the bacteriological examination.

Four tests are described for detecting if milk has been boiled or pasteurised—the old guaiacum test, and three tests with hydrogen peroxide—the complementary reagents being respectively hydroquinone, ortho-methyl-aminophenol and metol. The authors do not state which they recommend.

An interesting point is mentioned in connexion with condensed milk. It is usually assumed that blown tins are unfit owing to decomposition of the milk. The authors, however, state that this is not correct, as in some such cases the milk has been found to be absolutely sterile; they quote Dodge as affirming that the blown condition may be due to electrolytic action between the metals of which the can is composed and acids generated by bacterial growth in the milk before condensation. No reference is given to the original account of this observer's work, which is a pity. In such cases the authors question whether a whole batch of tins should be condemned if a few are found to be blown; but in circumstances where every individual tin cannot be separately examined, we think that it would be well to err on the safe side and condemn.

In Chapter xxiv., treating of fruit and vegetables, the typhoid outbreak at Hackney in 1903, due to watercress, is described. In a sample of water from one of the watercress beds at West Ham no fewer than fifty *B. coli* were found per cc. Under the mention of bread it is noted that baking does not thoroughly sterilise a loaf, and that bacteria and moulds may be cultivated from the central portion. The observations of Waldo and Walsh, a few years back, are not, however, referred to. No doubt there is a real need for strict sanitary supervision of bakehouses and their water supply.

Food poisoning is dealt with in Chapters xxv. and xxvi.: the account of the outbreaks that are mentioned is not as detailed as might be wished. On the general question the authors' opinion (p. 309) is, that "it is exceedingly doubtful whether the ptomaines ever occur in food products in sufficient quantity to produce poisonous effects. In practically all cases, when a substance is being examined for ptomaines, it is found that the liquid containing them is far more poisonous than the alkaloids isolated therefrom, and many ptomaines which have been isolated have little, if any, deleterious effect upon the system. It is not surprising therefore that many now hold the opinion that the term ptomaine poisoning is a misnomer, and that the poisons produced in foodstuffs from the proteid matter therein are not of the nature of alkaloids. To these poisons the generic term of 'toxin' has been applied, and they appear to be more nearly related to such active principles as ricin and abrin occurring in certain plants, and with venom, the active principle occurring in the venom of various species of snakes, the chemical nature of which remains as yet unknown." While in some instances the symptoms are probably caused by bacterial products formed in the food prior to ingestion, and are therefore true "intoxications," it is held that the large and serious epidemics of meat poisoning are more frequently of the nature of "infections." It is noted that the presence or absence of an "appreciable incubation period," usually cited as a distinction between the two, is not a true criterion; but Delepine's important detection (in the Derby case, 1902) of a Gaertner-like bacillus, capable of growing with such rapidity that broth was made turbid in two hours, which furnishes a reasonable

explanation of such outbreaks, is not alluded to. This subject of food poisoning is a difficult one, and it cannot be said that the account here given is particularly illuminating. The facts do not appear to be well arranged.

The examination of food in the next chapter is dealt with clearly and systematically. It is pointed out that, before making a chemical examination, feeding experiments should be carried out to ascertain if a poison is present; and that mice should be used, not rabbits or guinea-pigs, since these animals cannot vomit.

The detection and estimation of preservatives is well described in Chapter xxvii., metallic impurities and colouring matters being considered in the next two chapters. The volume terminates with a useful *résumé* of legal cases.

As a whole, the book justifies the opinion of the authors in the preface, that there is no work "in which this subject of unsound food in its relation to health is so fully dealt with as in the present volume." It will undoubtedly prove "of practical value to medical officers of health and others interested in the nation's welfare." Its usefulness would have been increased if more numerous and fuller references had been given to original authorities. The Departmental Committee's Report is very largely drawn upon, but in almost all cases without exact reference. In many cases an insufficient reference is given; as on p. 14, where Liebreich's "Effects of Borax and Boric Acid on the Human System" is referred to, without date and without page or chapter. On p. 267 it is said that "in London dairies it is estimated that 25 per cent. of the cattle are suffering from tuberculosis." This assertion might have some value if the grounds on which it is based were stated. The advice as to verifying one's references is certainly not superfluous in the present case, as there are several misprints in this volume. We notice "thermophylic," (p. 1); "acid radicle" (p. 125); "Dairy Produce Association" (p. 131) for Dairy Products Committee of Central Chamber of Agriculture; "*P. breviculare*" for "*brevicaule*" (p. 198); "Sir R. Buchanan" (p. 272); in the tabular statement on p. 179 the figures in the maximum and minimum columns (in regard to brandy and peas), should be transposed.

SYPHILOLOGY AND VENEREAL DISEASE. By C. F. Marshall, M.D., &c.
London: Baillière, Tindall and Cox, 1906. Pp. 509, 5 plates, large post 8vo. 10s. 6d.

Dr. Marshall has chosen a suitable occasion for completing and publishing his book on the venereal diseases. Even before the discovery of the *Spirochæta pallida*, by Schaudinn and Hoffmann, the revival of interest taken by the medical profession in this subject had become sufficiently manifest. It was recognised that our want of accurate knowledge as to the parasitology of syphilis had become a disgrace to medical science, and the remarkable medley of views as to the treatment of the disease had long required systematic arrangement. The result of these opinions showed itself in many ways throughout the profession, and the Army Medical Department has taken its full share in promoting the revival of this interest.

The reports of the Advisory Board, issued from Headquarters, are, in themselves, a textbook of modern treatment, and Dr. Marshall's conclu-

sions, so far as treatment is concerned, coincide very closely with the opinions expressed in these reports.

In Dr. Marshall's book the value of the discovery of the *Spirochæta* is prudently appreciated. As the result of a careful review of the subject he says, "It is, therefore, permissible to assume, in the present state of our knowledge, that the *S. pallida* is the pathogenic microbe of syphilis, and that lesions in which it is found are contagious."

Dr. Marshall is, however, not content with giving a *résumé* of the ordinary manifestations of syphilis and their treatment, but has made his work more complete by reviewing the results of syphilis as they affect the circulatory system, the alimentary system, the respiratory system, the early and late effects on the nervous system, and on the other organs and tissues of the body. There are chapters also on syphilis in relation to life assurance and marriage, hereditary syphilis, and syphilis of the third generation, on the experimental inoculation of syphilis in animals, and on the researches towards a serotherapy of the disease. It will thus be appreciated that his work is very complete, and we are pleased to be able to add that it is very thorough.

The chapters on gonorrhœa and other venereal diseases naturally occupy a smaller compass than those on syphilis, but the information in these sections is also sufficiently ample, and the treatment is reviewed from the standpoint of recent investigation.

We are glad to observe that Dr. Marshall has not omitted to add a copious bibliography on the subject, an addition which will be much appreciated by many members of the Corps.

Dr. Marshall's book has the additional advantage of being well written and therefore readable. This book can be safely recommended as a trustworthy *résumé* of our knowledge of these subjects at the present time.

A MANUAL OF BANDAGING. By C. Henri Leonard, A.M., M.D. London: Baillière, Tindall and Cox. Pp. 159, 139 illustrations. 3s. 6d. net.

This book, which was first published thirty years ago, appears to have undergone little or no revision since that surgically remote period. It contains much useless information, and not a little that is misleading and dangerous. It is difficult to deal seriously with a work in which a charcoal poultice is said to be "antiseptic and disinfective," and in which oakum is recommended as an antiseptic surgical dressing. The author seems to have a touching belief in the efficacy of bandages in preventing what he terms "vicious cicatricial contraction" after burns; the other main functions of bandages apparently being "to confine poultices" and "to restrain swelling" in cases of fracture. It is quite in keeping with such teaching that the rules given for determining whether a bandage has been too tightly applied are quoted from Hippocrates, no reference being made to the circulation in the distal portion of the limb; with such an authority for a guide it is evidently needless to mention the work of a mere modern, like Harvey.

Among the large number of bandages described and figured are some that are useful, many that are complicated and ineffectual, and some that are so simple that they might well have been omitted. The nomenclature employed is startling in its pomposity; as an instance, the method of drawing back the shoulders by means of two handkerchiefs, is here called the "compound dorsal bi-axillary cravat." French terms are used where

English equivalents would be simpler and more readily understood. The descriptions of bandages are, on the whole, clear and straightforward, and the figures are good. It would be easy, were it worth while, to draw attention to other faults, but enough has been said for our purpose. A book of this nature is intended for students and nurses, and may do much harm by misleading those who are unable to discriminate between sound and unsound teaching. This work is altogether untrustworthy and cannot be recommended.

Correspondence.

THE FUTURE OF THE JOURNAL.

TO THE EDITOR OF THE "JOURNAL OF THE ROYAL ARMY MEDICAL CORPS." _____

SIR,—I trust you will excuse the liberty I take in making the following suggestions, but I know that a considerable number of our officers do not subscribe to the Journal, which fact would seem to prove that there is a lack of general interest and that it is not widely popular. If such is the case it is much to be regretted, for I am sure that those of us (and there are very many) who have the interests of the Corps at heart feel that if we can extend its popularity so as to secure the support of all—or nearly all—the results may well be of the most far-reaching character, in the fostering of that cordial feeling of *camaraderie* and regard for the well-being of the body politic, which is usually included in the generic expression *esprit de corps*. It is evident that any scheme of reform must of necessity be dual in its inception—critical on the one hand, suggestive on the other.

First, then, as to criticism. It appears to me that, heretofore, the tone of the Magazine has been too ultra-scientific, too strictly professional, and especially, too prominently bacteriological. No doubt to the expert it may be highly interesting to know that under certain conditions monkey 27 is + and guinea-pig 43 —; but, to the non-expert, it is somewhat wearisome to wade through columns of such experiments; he either skips them, or, if he does not, they convey no mental impression. The *results* are interesting and therefore should be published, but surely these long lists of numerical monkeys and guinea-pigs might be relegated to appendices or stored amongst the archives and available for reference. You cannot pump up any enthusiasm about a number, and if these earnest workers would even condescend to call monkey 27 "Jacko," and guinea-pig 43 "Sue," it might, conceivably, excite a passing interest, and, so to speak, impart a little colour to an otherwise bald statement. It reminds me somewhat of the man who, after reading some pages of a dictionary, remarked that "it was very interesting, but he could not quite follow the thread of the narrative." Moreover, there are hosts of journals and magazines already existent whose pages are open to such contributions. Understand me, however, clearly. I do not for a moment advocate the elimination of all